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AMERICAN MARINE EXPOSITION NUMBER

Setting exact standards for the oxy-acetylene process



The Union Carbide and Carbon Research Laboratories, Inc., occupies almost a city block of floor space in this large building in Long Island City. Floor space, however, means little in a research laboratory if men and equipment are lacking. The equipment is as complete as that of any laboratory in the United States and the caliber of men is indicated by the fact that one of chemistry's most coveted prizes—the Perkin Medal—was recently awarded to one of the staff

THE Union Carbide and Carbon Research Laboratories, Inc., at Long Island City, is really manufacturing standards for the oxy-acetylene process.

New applications of the process usually originate in the field. They could be developed by the trial and error method and passed from one welder to another by rule of thumb instruction.

The Linde Company, however, submits such new applications to its research laboratory. Here, not only is the weld tested, but the correct procedure worked out so that it is metallurgically sound. Applications perfected in the Linde laboratory work—not occasionally, but *every time*.

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November, 1925





IN SPITE of what pessimists may say or think, the marine industry of the United States is not dead nor is it in a state of coma. From hearing much loose repetition of the phrase "business is rotten" one might readily visualize cargo carriers and passenger ships gradually falling to pieces tied up at decaying piers with grass sprouting in the driveways of the waterfront. The actual situation is quite different and a little close up inspection and reflection will show that the marine industry of the United States, instead of being likened to an old white-haired bent-backed palsied figure, tottering along to his imminent total extinction, might much more truly be compared to a young, hardy, vigorous, virile youth with his life and a brilliant future before him, again in spite of what the pessimists would have us believe.

Almost all marine men keep up a dour front and grouse a great deal, probably due to the impress of Scottish traits on all branches of the industry. Give a chance then to those other traits of the same race, keen intelligence, vision, economy, tenacity in the face of odds, attention to details and an unconquerable spirit which never admits defeat. Isn't it sound thinking to view the present situation in shipping rather along the lines recently expressed in a letter to the editor of MARINE REVIEW by a well known and successful American steamship owner of New York city, to wit? *"For ourselves, we have always taken conditions as they are, and each day with hard work and attention to details, we try to operate our ships as well and as economically as we can. We have had a gradual growth*

and have never doubted our ability to continue to grow and expand. In this respect, I feel the shipping business does not differ from any other industry. Hard work, attention to detail, economy, with a desire always to expand, but with a proper realization of your resources and your credit position, will give success in the operation of ships as it will in any business. Some of our laws we would like to see changed, but we are and have been too busy to worry about what we cannot control." The above statement would serve mighty well as a sensible and courageous creed for American shipping.

Service and Economy Spell Success

The basis for shipping in any country is the demand for transportation of goods and persons. Ships, therefore, are the tools of industry, of human activity, desires and whims, and cannot economically exist on any other basis. This reason for the existence of ships seems to have been lost sight of in certain quarters and instead the notion has become prevalent that the steamship business is a sort of independent enterprise which can be set up and operated for profit by anyone, anywhere. The war, of course, was responsible for many of these ready-made steamship ventures and the laudable purpose of the Federal government, having built an emergency fleet, to make the most of it in order to enhance national interests and safety, was responsible for others. These latter, of course, supported by the United States treasury can be continued so long as the citizens of the country wish, but this is not shipping in the sense that a demand either

existing or to be created required an expansion of service. Of course, the demand for service was there and it can be increased, but it was already being fully taken care of by foreign lines. A private operator going forth to take business away from many powerful rivals could not afford to continue ships on schedules for a prolonged period and constantly lose money.

As the economical basis for the existence of ships is a demand for transportation, increasing prosperity and expansion of trade and travel directly benefit and increase the need of ships. It follows that transportation, preceding trade, will often open up new markets and sometimes the development of resources and the building up of trade is carried on jointly with its movement to the great benefit of the entire business.

Shipbuilding Increase Is Assured

To meet the extraordinary demand for ships during the war, a tremendous expansion of shipbuilding took place. The new shipyards which sprung up just for the emergency have been liquidated and are forgotten. But the older established yards also greatly expanded their facilities. In number and capacity, even prior to this expansion, these yards were in excess of merchant shipbuilding needs, and were dependent on naval work to carry the heavy overhead. Then came the disarmament treaty of 1921 with the cessation of practically all naval work. Conservative management of these shipyards no doubt applied a portion of the profits from the good years to build up a reserve and to write off any capital investment in expansion of facilities not paid directly out of pocket by the government. At any rate the old established shipyards since 1923 have faced an acute scarcity of work and the prices, though they seem high enough to the steamship owner, have been too low on account of the exceptional competition for the shipyards to make any money.

The above is the gist of the shipbuilders' plaint and it is perfectly truthful except that it leaves out all mention of any ameliorating circumstances. Retrenchment was to be expected and was by no means confined to shipyards. Many fine tools and much new equipment had been acquired and paid for, so that they have been in a better position than ever before to carry out work efficiently and at low cost. A considerable volume of repair work has been offered. In the fiscal year, 1923, 134 steel vessels of 245,576 gross tons were built in the United States which is a larger number and greater tonnage than was built in any year prior to 1917 since 1910. The fiscal year 1924 fell considerably below 1923 but the present fiscal year is likely to show an encouraging increase.

Active Tonnage Doubled Since 1914

What then is the present prospects and future outlook for the American merchant marine? Statistics at the best are dry and may sometimes be misleading, but certain outstanding facts can be demonstrated. On June 30, 1914, the total American merchant marine of 100 gross tons and over consisted of 3100 vessels of a total gross

tonnage of 5,323,048 tons. On June 30, 1925, the same classification consisted of 4790 vessels of 15,313,552. Of this fleet 254 private vessels and 894 shipping board vessels of a total tonnage of 4,324,441 gross tons were laid up leaving in active service 3642 vessels of 10,989,111 gross tons, which means that there is over double the tonnage and 542 vessels more in number in active operation in this classification under the American flag today than there was in 1914. Taking all classes of vessels, wooden and metal, sail, steam and gas, registered, enrolled and licensed down to the smallest tonnages, including canal boats and barges and gasoline vessels documented in the United States merchant marine on June 30, 1924; there were 26,575 of 17,740,557 gross tons. Subtracting from this number the laid up vessels we have 25,427 of 13,416,116 gross tons, whereas on June 30, 1914, there were 26,943 of 7,928,688.

Allowing an average age of 25 years, 4 per cent of existing tonnage ought to be replaced each year to maintain the present strength only. This would mean taking the tonnage over 100 gross tons in active service, 146 vessels of 439,564 gross tons, not including replacements necessary through losses of vessels. This figure in tonnage is nearly three times the new tonnage in this classification under construction or contracted for in American shipyards August 1, 1925. If we take all vessels down to the smallest sizes, documented in the United States merchant marine on June 30, 1924, and allow an average age of 25 years the total replacements each year not including replacements for losses ought to be 1017 vessels of 536,645 gross tons which is nearly 2½ times the new tonnage in this classification constructed in American shipyards during the year ended June 30, 1924.

Everyone with faith in the future of the United States, and with any vision, even though justifiably conservative, will allow that the growth of population and the expansion of industry and agricultural productivity is bound to tax present means of transportation and that a steady continued growth of the merchant marine for the vast domestic movement and for foreign commerce is inevitable. Present shipbuilding is therefore far below the legitimate needs and requirements of commerce, present and future, and a very considerable increase may be looked for with certainty.

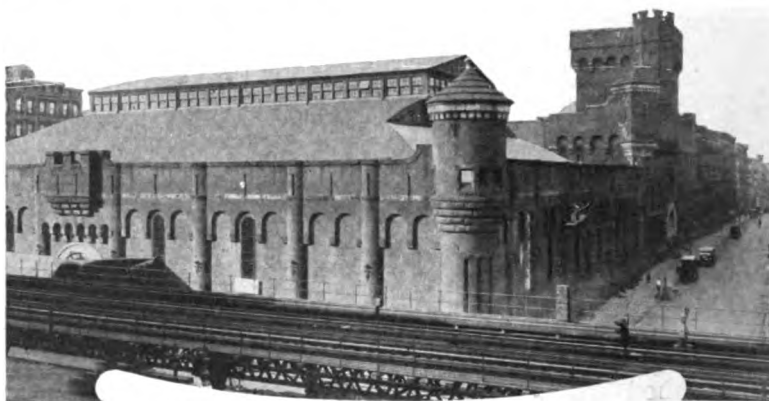
Employment of American Ships Grows

Let us now look at the actual employment of American vessels. For the fiscal year, 1924, vessels totaling 67,655,378 net tons entered ports of the United States engaged in the foreign trade. Of this enormous tonnage, 29,006,399 tons or 42 per cent was American. For the same period 67,885,162 net tons cleared from ports of the United States, engaged in the foreign trade. Of this tonnage, 29,309,131 tons or 43 per cent was American. In 1914 only 26 per cent of the total tonnage entered and cleared from ports of the United States engaged in the foreign trade was American. In dollars and cents value, the total imports and domestic exports of the United

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Distinct Engineering Progress is Keynote of Marine Week

Latest Marine Equipment Will be Displayed at Exposition Nov. 9 - 14 — Naval Architects Will Meet for Two Days



Where the Marine Exposition of 1925 will be held—The Two Hundred and Twelfth Anti-Aircraft Regiment Armory, Sixty-second street and Columbus avenue, New York City

AERICAN marine week was inaugurated in 1921, dedicated to the upbuilding of the merchant marine by promotion of good will and co-operation among all the various interests concerned and to arouse in the public mind an interest in and an appreciation of the vital importance of ships and shipping to national safety and continued prosperity. No nation is sufficient unto itself, our own not excepted, and means of communication must be created and maintained of sufficient scope so that we will not be at the mercy of foreigners whose own national interests naturally come first.

The work begun in 1921 has been faithfully continued with increasing effect and the activities carried on during marine week each year serve as an established and powerful influence for the good of the industry in focussing public attention on the development of the merchant marine. This year marks the fifth observance of marine week and the fourth marine exposition, which will be held at the armory of the Two Hundred and Twelfth Anti-Aircraft Regiment at Sixty-second street and Columbus avenue, New York, Nov. 9-14, under the auspices of the American Marine Association Inc., a co-operative organization composed of shipbuilders, shipowners and operators, engine builders, marine equipment manufacturers and ports and terminals.

The Society of Naval Architects and Marine Engineers will hold its thirty-third general meeting in the Engineering Societies building, 29 West Thirty-ninth street, New York, on Thursday and Friday, Nov. 12 and 13. Marine week

will also be observed by 15 marine organizations, with 30,000 members, who will hold their annual or special meetings in New York during this time. Among these will be the American Institute of Electrical Engineers (marine committee) United States Naval institute, American Marine standardization committee. Neptune association, Propeller club, Port of New York Authority, American Society of Marine Designers, Marine Engineers beneficial association, United States ship operators' association, American bureau of shipping, Council of American shipbuilders, Ocean association of marine engineers, Maritime association of port of New York, Tug Boat exchange, and the Mississippi Valley association.

Marine Exhibition Shows Progress

As it is two years since the last Marine exposition, the one held this year will be of unique interest due to the many developments which have been made in marine engineering. There will also be included interesting models of air craft construction. About sixty individual companies in addition to several departments of the government will have displays demonstrating latest inventions and modern equipment for vessels. Another extremely interesting features of this show will be the boy scout ship models' contest. This contest will be conducted under the auspices of the American Marine association in conjunction with the Boy Scout association of New York. More than one hundred ship models of the clipper ship era, made by Boy scouts will be submitted. The win-

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What Practical Marine Men Think of The American Merchant Marine

As Expressed in the Deliberate Opinions of Four
Leaders Directly Engaged in the Marine Industry

TO ESTABLISH in any definite way the future prospects of the American merchant marine is an intricate problem of tremendous magnitude. The issue is confused and complicated by the divergence of many interests. World politics, foreign markets, domestic prosperity, economics, geographical characteristics, racial aptitude, existence or lack of national pride and ambition to be powerful on the sea, and many other factors enter into any attempt at a solution. As one prominent shipbuilder said on being asked to offer his opinion: "I have nothing to say; only a Solomon could give an opinion on this question." However, in this reply it is clearly evident that this shipbuilder is merely uncertain of the outcome, he is not definitely pessimistic for then his answer might have been that there was no hope for an American merchant marine. But let those leaders in the industry who have replied to the inquiry of the editor of MARINE REVIEW for an expression of their opinions, with permission to make them public, on the present and future prospects of American shipping and shipbuilding, looking ahead four or five years, speak for themselves. On the whole, these great leaders believe that the American merchant marine has turned the corner and is now headed for better days.

By Joseph J. Tynan

Vice President, Bethlehem Steel Corp.

SHIPBUILDING has been in a state of decline for the past several years not only throughout the United States, but also in the several European shipbuilding countries, due entirely to the unstable conditions existing in the world's markets and commerce. The monetary situation in the European countries did much to disturb the normal economic condition. The national debts of the various countries were also a contributing factor, and the surplus tonnage built during the war for emergency use pro-

vided the means for carrying what little world commerce there was, thus overcoming the necessity for any building of new vessels, even though



JOSEPH J. TYNAN

changes of design, in order to expedite war construction, made the vessels that were available unsatisfactory for the particular purpose for which they were to be used under peacetime conditions.

I believe that the time has now come when through the scrapping of a considerable number of available ships not suitable for economical operation and the absorption of tonnage which might be at least partly desirable for present day commerce, we can look forward to a brighter future than has been experienced for some years past.

Trading with new countries, restoring trade with our old commercial friends, made possible by the stabilization of foreign exchange, a forecast of a good cotton crop, a spirit of optimism on the part of the railroads whereby they can see their way clear to spend money on new construction and new equipment, a desire on the

part of the government to encourage private ownership of the merchant marine and a reluctance on its part to tamper with the tariffs to any considerable extent, to my mind are all conducive to a stabilized condition whereby active business interests of the country may look ahead with a degree of certainty and optimism and plan for an era of business activity which should continue for some years to come without any demoralizing upset.

* * *

By Frank C. Munson

President, Munson Steamship Line

ACTUAL conditions in the maritime trades of the world are very poor. The only bright spot during the past two years has been the agreement reached by the transatlantic lines in the past two years has been the agreement reached by the transat-



FRANK C. MUNSON

lantic lines in the conference by which rates have been maintained and all lines have this year received a good many millions of dollars of increased

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Exhibits Show Latest Equipment for the Business of Transportation by Water

AJAX ROPE CO., INC., 95-97 Liberty street, New York—This company will exhibit a noteworthy display of rope products. Across the back wall of booth No. 3 will be a large sample board containing lengths of the various sizes, grades and classes of rope products comprising the company's line, particularly for the marine field. Full coils of rope of various sizes will be used for decorative purposes. The following will be in attendance: R. S. O. Lawson, president; G. Weiss, general manager of sales; J. H. McGovern, metropolitan sales manager and M. L. Mintzer, B. C. Hill, R. S. Robb, F. Fisher, G. J. C. Denner, J. E. Ormsby, J. F. Jones and D. P. Brooks.

AMERICAN ENGINEERING CO.—The company will exhibit in operation the electro-hydraulic steerer and electro-hydraulic windlass built by it for the yacht *ALOHA* which is being converted from steam to diesel electric drive for Commodore Arthur Curtis James of the New York Yacht club. The steerer is of the same general type as that installed on a number of recent boats, including the Ford motorship *EAST INDIAN* and *VINCENT FORD*, and embodies the same principles of design as the very large electro-hydraulic steerers built for the airplane carriers, *SARATOGA* and *LEXINGTON*. The exhibit will occupy both No. 55 and the following representatives will be in attendance: P. E. Kriebel, P. C. Kelly, E. B. Bryant and H. Buckholtz.

AMERICAN MACHINE & FOUNDRY CO., 5520 Second avenue, Brooklyn, N. Y.—This company will exhibit in booth No. 16. A complete line of direct engine and motor-driven rotary pressure and vacuum pumps will be displayed. The exhibit will be in charge of C. Q. Wright Jr., sales manager of the pump department of the company, assisted by C. E. Anderson and F. Colby, designing engineers.

ASBESTOLITH MFG. CO., 1 Madison avenue, New York—This company will exhibit in booth No. 6. There will be on display in this booth many samples of Asbestolith deck covering in various colors such as terra cotta red, green, blue, black, buff and French gray, both in plain colors and in designs of panel work and squares with filled in joints of another color, making a slightly tile effect. This material is applied equally well on wood, concrete or steel deck foundations. There will also be samples of Perlex stucco which is adaptable for outside work and for interior wainscoting. A practical demonstration will also be given of the application of material, by a skilled workman. The company will be represented by R. C. Burnside, president; J. H. Mulcahey, secretary and assistant treasurer; T. C. White, Jos. Carter, Miss Frances Hruby, and Phillip Reinhardt.

BABCOCK & WILCOX CO., 85 Liberty street, New York—A full size sectional model of a Babcock & Wilcox marine water-tube boiler will be exhibited in their booth No. 51. There will also be models of the various types of oil burners constructed by this company together with a number of pictures

and models of different sorts of boiler mountings and fixtures. Many marine installations have been made by this company since the last marine exposition, and especial interest will therefore be found in this exhibit. The following representatives will be present during the sessions of the exposition: C. W. Middleton, J. H. King, A. Ross Mackay, T. B. Stillman, G. H. Daniels, Jas. Graham and Edw. A. Colson.

BALTIMORE, PORT OF, Baltimore, Md.—The Port of Baltimore will exhibit in booth No. 63 at the Marine Show. There will be exhibited by the Bureau of Harbors of the Department of Public Works of the city of Baltimore, a beautiful model of Baltimore harbor. Of course, all questions relating to the business and port facilities of Baltimore will be thoroughly taken care of. Geo. A. M. Schaefer, assistant harbor engineer, will be in charge.

COAST AND GEODETIC SURVEY, Washington—This exhibit represents the contribution of the department of commerce. Owing to the limited space it was decided to give it all over to the Coast and Geodetic survey on account of the importance to marine interests of the work of this department. The exhibit will consist of a wide selection from the 660 different nautical charts issued by

the Survey, copies of the 15 different volumes of coast and inside route pilots published to supplement the charts, instrumental equipment, photographs and pamphlets illustrating various field operations of the Survey. The department will be represented by Lieut. K. T. Adams, Coast and Geodetic Survey, who is also in charge of the New York field station of the Survey. This exhibit will be in one of the four booths Nos. 25, 26, 27 and 28 reserved for the United States government.

COEN CO., INC., 50 Church street, New York—In the booth of this company which is No. 60 will be exhibited their mechanical oil burners and air register firing fronts, steel construction easily cleanable oil heaters, duplex oil strainers, fuel oil pumping sets, steam atomized oil burners, and a complete line of oil burning outfits for vessels of all descriptions. The Coen Co. will be represented at the exposition by Wm. M. Wampler, Eastern manager, the company's home office being at 112 Market street, San Francisco; F. S. Harper, Eastern sales manager and C. T. Stansfield, engineer.

DAVIS ENGINEERING CORP., 90 West street, New York—The exhibit in booth No. 18 will show the paracoil products of this company. There will be evaporators with automatic float feed control, an improved paracoil feed water heater, a paracoil oil heater and sections of the improved paracoil oil heater and feed water heater. There will be a coil board showing the different sizes of coils used in the paracoil products. There will also be shown in detail the Davis spherical valve steam traps of a new design. The Rand system for fuel oil heating in inner bottom tanks without the use of coils and the Davis exhaust gas steam generators for use on diesel vessels will also be shown. The company will be represented at the marine show by H. C. Davis, Wm. H. Thompson and C. G. Smith.

DE LAVAL SEPARATOR CO., 165 Broadway, New York—This company will exhibit at booth No. 83. The full line of centrifugal oil purifiers designed for purifying turbine and diesel lubricating oil, and fuel oil will be shown. Particular interest will attach to the purifier for fuel oil, especially to operators of diesel driven vessels. The subject of fuel oil purification has received a great deal of attention from marine men in recent months. The De Laval Co. will be represented at the show by W. D. Cleary, J. H. Liale, D. F. Miller and R. Kostelak.

DIAMOND POWER SPECIALTY CORP., Detroit—This company's New York office is at 90 West street. The exhibit at the marine show will be in booth No. 13. The diamond valv-in-head soot blower, the Diamond G-2M soot blower, Diamond model "B" rear-end soot blower and Diamond model BBM soot blower will be shown in full size. The following representatives will be in attendance: Lynn W. Nones, A. C. Lippincott, Jr., and Wm. Crawford.

DIEHL MFG. CO., Elizabeth, N. J.—This company will exhibit in booth No. 66. Watertight deck motors, drip proof motors for use under deck, desk fans, ceiling fans, ex-

Exhibitors and Booth Numbers

American Engineering Co.....	55
American Machine & Foundry Co....	16
Ajax Rope Co., Inc.....	3
Asbestolith Mfg. Co.....	6
Bernier, New York, Inc.....	12
Babcock & Wilcox Co.....	51
Baltimore (Port)	63
Boy Scouts	20, 21
Coast & Geodetic Survey	25, 29
Coen Co., Inc.....	60
Davis Engineering Corp.....	18
De Laval Separator Co.....	83
Diamond Power Specialty Corp.....	13
Diehl Mfg. Co.....	66
Edison Electric Appliance Co.....	92
O. M. Edwards Co., Inc.....	35
Engineers Book Shop.....	
Fairbanks, Morse & Co.....	57
Fillrators Co	5
Foster Marine Boiler Corp.....	22
General Electric Co.....	81
Goldschmidt Corp	30
Griscom-Russell Co.	70
Hill Diesel Engine Co.....	38
Hunt-Spiller Mfg. Corp.....	82
Hyde Windlass Co.....	32
Journal of Commerce.....	11
Walter Kidde & Co.....	39
Marine Decking & Supply Co.....	31
Marine Journal	15
Marine Review	33
Morse Dry Dock & Repair Co.....	34
Motorship	19

haust fans and centrifugal blowers will be shown at the marine exposition. The following will be in attendance during marine week at the show: M. W. Buchanan, W. E. Fey, both from the factory in Elizabeth, and A. B. Miller, D. J. Entwistle and Julius Levy from the New York office.

EDISON ELECTRIC APPLIANCE CO., 5600 West Taylor street, Chicago—This company will occupy booth No. 92 at the marine exposition. The complete line of electrically heated heavy duty equipment especially designed for marine use will be on exhibition. Of particular interest will be a new type of bakers oven with many improved features; also a new marine range which can be knocked down to be moved through narrow passageways and doorways. The exhibition will be under the charge of Grant Call.

O. M. EDWARDS CO., INC. This company will be located in booth No. 35 at the Marine show. Window glass balances for application to promenade deck as well as brass sash for saloon and stateroom windows, and a full line of sash locks and anti-rattlers will be on display. The company will be represented by O. M. Edwards, J. J. Edwards and A. J. Horgan.

ENGINEERS BOOK SHOP, 126 East Forty-third street, New York—This company has taken the space in the hall and will have on exhibition about 150 to 200 of the newer books of all publishers covering the fields of marine engineering, shipping, exporting, importing, and allied subjects. There will be in attendance Kenneth Meeker and E. Harder.

FAIRBANKS, MORSE & CO., 122 Greenwich street, New York—This company will occupy booth No. 57 and will exhibit one 120-horsepower type "CO" 4-cylinder, reversible, heavy duty diesel type oil engine; one generating set of 15-horsepower type "CO" 2-cylinder engine direct connected to a 9-kilowatt DC generator; one 7½-horsepower "CO" single cylinder engine direct connected to a 4½ x 4½, five hundred revolutions per minute air compressor; a motor-driven centrifugal pumping unit consisting of a 3-inch single stage HD horizontally split casing, brass fitted, ball bearing centrifugal pump, direct connected to a 7½-horsepower motor; and a motor driven reciprocating pumping unit. The company will be represented by T. W. Drennen, manager of the marine department at the New York branch, C. T. Marshall manager of the marine department at Boston, and J. P. Hill, manager of the marine department at Baltimore.

FOSTER MARINE BOILER CORP., 111 Broadway, New York—Will occupy one-half of the Power Specialty Co., booth No. 22. Complete data will be shown of the new installations which have been made of Foster steam generating units. The representatives in attendance will be Jos. J. Nelis, H. W. Parsons and C. A. Ruuth.

GENERAL ELECTRIC CO., Schenectady, N. Y.—This company will occupy booth No. 81. The exhibit will include a steam engine driven generating set with its switchboard, a turbine suitable for driving either a generator or a pump, a "below decks" motor of the new CD line, a searchlight and an air mail beacon. C. T. McLoughlin will be in charge of the exhibit for the General Electric Co. Other engineers and specialists in marine applications of the company will also be present.

GOLDSCHMIDT CORP., 15 William street, N. Y.—This company will exhibit in booth No. 30. Models of six different types of contrapropellers attached to a model stern frame; a model of the Flettner rudder complete with gear and mechanism; one com-

plete induced turbo draft equipment suitable for vessel developing 800 indicated horsepower; plans, data, and photographs of latest Lentz engine design; electric engine room telegraph of the Neufeldt and Kuhnke system; rudder indicator of N. & K. system; and a level indicator of N. & K. system. There will also be given out for the first time a catalog completely covering contrapropellers and their installation. This catalog will contain the conclusion on the model basin experiments conducted with contrapropellers. The Goldsmith Corporation will be represented by O. Overgaard, secretary; the N. & K. division, Kiel, will be represented by F. O. Willhoff; and the Bethlehem Shipbuilding Corp. will be represented by J. W. Hendry.

GRISCOM-RUSSELL CO., 90 West street, New York—This company will occupy booth No. 70. Representative lines of marine equipment will be shown. These will include a Reilly single pass marine feed water heater, a two pass feed water heater, and a Reilly multiscreen feed water filter and grease extractor. This latter is recommended for the removal of final traces of oil and grease which may pass the filter tanks. This filter is of the pressure type and is installed between the feed pump and the feed water heater. There will also be shown evaporating equipment consisting of a Reilly pressure type evaporator, distiller and aerating filter of the charcoal filled type, used to remove certain non-condensable gases which exist in distilled water, and improves the water for drinking purposes. There will also be exhibited the marine bentube evaporator. A multi whirl lubricating oil cooler and the G-R straight tube fuel oil heater will likewise be shown. The exhibit will be in charge of Robert Colston and S. F. Maury.

HILL DIESEL ENGINE CO., 51 East

Forty-second street, New York—This company will exhibit in booth No. 38 in connection with the Northern Pump Co. There will be exhibited a combined 2 cylinder 12/14 horsepower Hill engine directly connected through clutches and a chain drive, to a Northern pump; an Ingersoll-Rand compressor, and a General Electric generator. The equipment on exhibit is a special type of job for diesel tugs. There will also be shown a 4 cylinder Hill marine propulsion job and the latest models of Northern pumps for all pumping duties in the marine field. H. D. Hill of the Hill Diesel Electric Engine Co. and D. B. Trueblood of the Northern Pump Co. and J. A. Hense, branch manager, will be in attendance at the show.

HUNT-SPILLER MFG. CORP., 383 Dorchester avenue, Boston—This company is new at marine expositions but it will have in booth 82 a fine exhibit of highly-refined air furnace gun iron, very extensively used by railroads and locomotive companies for cylinders, bushings, pistons, piston rings, valve bushings, valve bull rings, valve rings and other frictional parts of steam locomotives. These products have produced excellent results in locomotive service operating under highly superheated steam and have attracted the interest of marine engineers on account of the demand for high grade materials for liners, in steam cylinders using superheated steam and in internal combustion engines. Typical examples of sectional rings and springs will be on exhibit at the booth; also photographs and particulars of larger marine engine parts will be shown. The company will be represented by V. W. Ellet, sales manager; A. B. Root, Jr., mechanical engineer; and Leroy O. Arringdale, marine representative.

HYDE WINDLASS CO., Bath, Maine—In booth No. 32 the Hyde Windlass Co. will exhibit the Hyde electric telemotor, the Hyde engine order telegraph and reply and the electric rudder indicator and hydro-electric steering gear. The exhibit will be in charge of F. L. Andrews, as in former years.

WALTER KIDDE & CO., 140 Cedar street, New York—This company will exhibit in booth No. 39. Different compartments of a model ship will be equipped with the Rich smoke detector and Lux carbon dioxide fire extinguishing system. The action of both the Rich and Lux systems will be demonstrated through the use of actual full size apparatus. In addition to this the Lux portable hand extinguisher and the electro-vapor electric steam radiator will be shown. The following representatives will be in attendance: C. L. Griffin, G. C. Hias, W. H. Freygang, C. Strain, D. Mapes and L. B. Zuber.

MARINE DECKING & SUPPLY CO., Tioga & Memphis streets, Philadelphia—Will occupy booth No. 31. In this booth will be shown a complete line of samples of marine decking, especially samples in various designs and colors now becoming popular with naval architects and shipowners for entrance lobbies, writing rooms, salons, smoking rooms and corridors of ships. A picture of the splendid passenger ship MALOLO now under construction at Wm. Cramp & Sons Ship & Engine Building Co., will be shown. The Marine Decking & Supply Co. received the order for laying the decking on this vessel. The following gentlemen will be in attendance during the exposition: W. M. Dobson, J. L. Dobson, H. B. Hughes and W. L. Peebles.

MORSE DRY DOCK & REPAIR CO., Brooklyn, N. Y.—This company will occupy booth No. 34. The oil burning department, the diesel engineering department and the general ship repairs will be particularly rep-

Exhibitors and Booth Numbers

National Malleable & Steel Castings Co.	1
Nautical Gazette	8
Navy Department	87
Newport News Shipbuilding & Dry Dock Co.	36
New York Commercial	17
New York Marine News	44
Northern Pump Co.	38
Pacific Marine Review	37
Peabody Engineering Corp.	4
Penton Publishing Co.	33
Pneumercator Co., Inc.	7
Port of Baltimore	63
Port of Galveston	50
Power Specialty Co.	22
Preferred Utilities Co.	91
Propeller Club	43
Radio Corp.	77
Selby, Battersby & Co.	9
Sharples Specialty Co.	46
Simmons Boardman Publishing Co.	40 41
Sperry Gyroscope Co.	75
B. F. Sturtevant Co.	72
Thorkote Products Co., Inc.	10
P. S. Thorsen & Co., Inc.	10
Todd Shipyards Corp.	2
United States Lines	69
George Walker, Ship Instruments	24
War Department	25-29
Westinghouse Electric & Mfg. Co.	45
C. H. Wheeler Mfg. Co.	42
Winton Engine Co.	56
Worthington Pump & Mach. Corp.	58

resented at this show. There will be a unique display of oil burning equipment. A furnace has been constructed of glass to represent a Scotch boiler furnace. Water taking the place of oil will be sprayed into the furnace under pressure so that an observer may note the performance of the Morse oil burner in conjunction with the Morse air register. A novel lighting effect will give the oil spray a red tint, making the display very realistic. Jno. T. Wiseman will have charge of the Morse booth. Others representing the Morse company will be D. J. Irish, Louis R. Ford, J. Geo. Kohl and Paul Nelson.

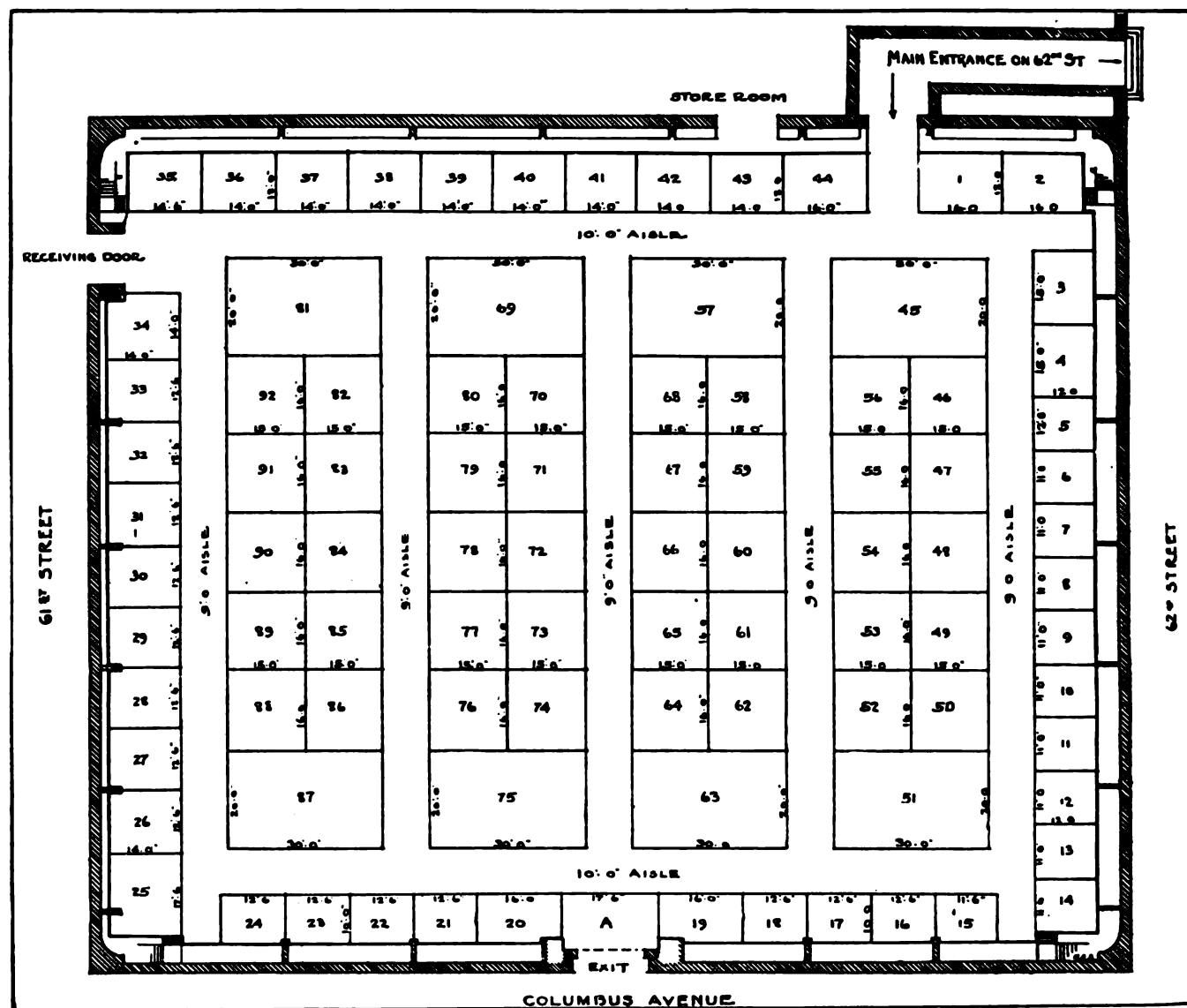
NATIONAL MALLEABLE AND STEEL CASTINGS CO., Cleveland—This company will

government. These booths are Nos. 25, 26, 27 and 28. The navy's exhibit this year will specialize on aviation. The exhibit has been prepared by the bureau of aeronautics at the naval aircraft factory, Philadelphia. In this exhibit there will be a number of models showing various types of planes. Capt. Geo. C. Westervelt, construction corps, manager of the naval aircraft factory, navy yard, Philadelphia, has charge of the preparation of the navy's exhibit. The exhibit will be cared for and explained by aviation personnel from the third naval district, New York City.

NEWPORT NEWS SHIPBUILDING & DRY DOCK CO., Newport News, Va.—Will

General Electric generator. The equipment on exhibit is a special type of job for diesel tugs. There will also be shown a four cylinder Hill marine propulsion job and the latest models of Northern pumps for all pumping duties in the marine field. H. D. Hill of the Hill Diesel Electric Engine Co. and D. B. Trueblood of the Northern Pump Co. and J. A. Hense, branch manager, will be in attendance at the show.

PEABODY ENGINEERING CORP., 110 East Forty-second street, New York—Will occupy booth No. 4 located on the Sixty-second street side of the building. The exhibit will include the new pulverized coal burner developed by this company. Experimental burners of



FLOOR PLAN OF THE TWO HUNDRED AND TWELFTH ANTI-AIRCRAFT REGIMENT ARMORY AT SIXTY-SECOND STREET AND COLUMBUS AVENUE, NEW YORK, WHERE THE MARINE EXPOSITION WILL BE HELD NOV. 9-14, 1925. SHOWS LAYOUT OF EXHIBITORS BOOTH SPACES AND NUMBERS

occupy booth No. 1. A complete line of Naco castings steel chain through the various sizes, marine railway chain, steam shovel chain and a number of types of shackles and swivels will be displayed during the exposition. The company will be represented by the following: Benj. Nields, Jr., W. C. Lewis and E. V. Sihler of the New York office; and E. E. Eyman and R. E. Valentine of Cleveland.

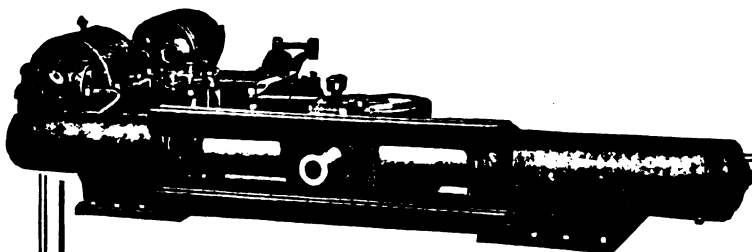
NAVY DEPARTMENT, Washington—The navy department will exhibit in one of the several booths reserved by the United States

occupy booth No. 36. The exhibit will display models of vessels built and features of the company's shipbuilding facilities. Messrs. Lee and Hoffman and other representatives of the shipyard will be in attendance.

NORTHERN PUMP CO., 51 East Forty-second street, New York—This company will exhibit in booth No. 38 in conjunction with the Hill Diesel Engine Co. There will be exhibited a combined two cylinder 12/14 horse power Hill engine directly connected through clutches and a chain drive, to a Northern pump; an Ingersol-Rand compressor, and a

this type are in use at the Sherman Creek station of the United Electric Light Co. The pulverized coal is ejected through a narrow angular opening or slot in the casting surrounding the burner opening. The air for combustion enters through the register with a rotary motion and forces the coal into the furnace in a rotating column giving a complete mixture. The exhibit will also include the standard air register and the Peabody viscosity regulator. The object of the regulator is to instantly and constantly de-

(Continued on page 400)



A-E-CO Electro-Hydraulic Steerer

A-E-CO Electro-Hydraulic Auxiliaries —the last word in ship machinery

The application of electro-hydraulic drive to A-E-CO Marine Auxiliaries—steerers, windlasses, capstans, winches, etc.—marks a third great step in the development of ship machinery.

Half a century ago, the first *steam* steering gear and the first *steam* windlass used in this country were designed and built in our shops.

In the last decade, a complete line of *electric* auxiliaries has been developed by us to meet the new conditions brought about by the growing use of Diesel drive for ships.

And in the last few years, A-E-CO *Electro-Hydraulic* Auxiliaries have won phenomenal recognition throughout the marine field by their high efficiency, economy of power, accuracy of control, space-saving compactness, noiseless operation and absolute reliability.

Today, many of the finest ships afloat, of every size and type, are equipped with A-E-CO Electro-Hydraulic Auxiliaries.

Airplane Carriers LEXINGTON and SARATOGA, Motorships EAST INDIAN, BENSON FORD, CHALLENGER, WM. PENN, SEEKONK, CALIFORNIAN, Diesel-electric Tugs VAN DYKE I, II, III, Yachts MIRAMAR, MAMIE O, DELPHINE, LINDONIA, and scores of other ships have A-E-CO Electro-Hydraulic Steerers. Palatial Yachts such as the DAUNTLESS and SIALIA have A-E-CO Electro-Hydraulic Windlasses.

And Commodore James' famous Yacht ALOHA, now being converted from steam to Diesel-electric drive, is to be equipped with both the A-E-CO Electro-Hydraulic Steerer and Windlass.

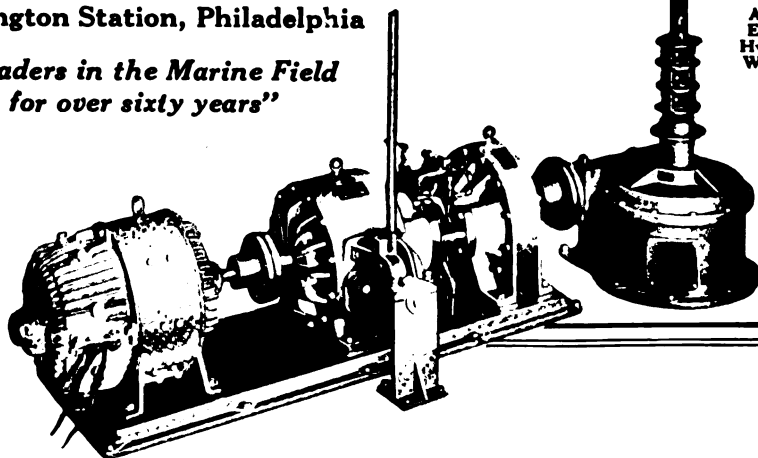
Whenever owners specify the finest and most up-to-date equipment for their ships, A-E-CO Electro-Hydraulic Auxiliaries are the builders' logical choice.

Brief descriptions of a number of our latest machines, with illustrations and prices, are given in the new WORKBOAT AND YACHT FOLDER. A copy will be sent you on request.

American Engineering Company

Kensington Station, Philadelphia

*"Leaders in the Marine Field
for over sixty years"*



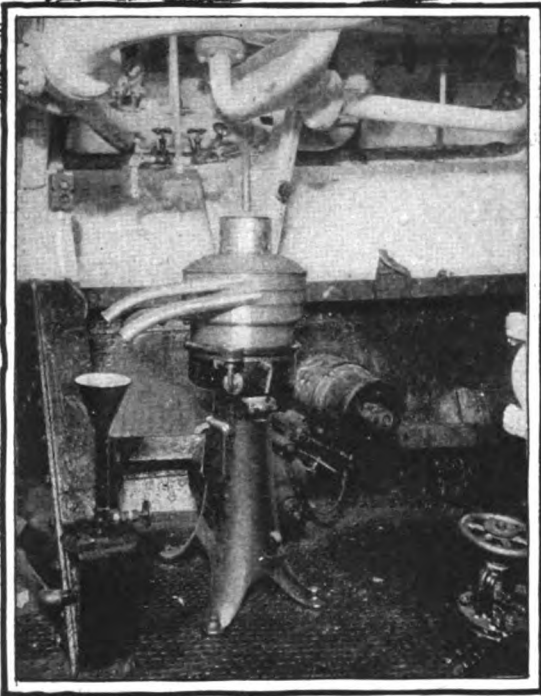
A-E-CO Electro-Hydraulic Windlass

At the
**Marine Show
New York
November 9-12**

We will exhibit
the A-E-CO
Electro-Hydraulic
Steerer and Windlass
to be installed on
the ALOHA
See them in action at
Booth 55

Please mention MARINE REVIEW when writing to Advertisers

Clean Oil for the Converted Gulf of Venezuela



THE De Laval Vapor-Tight Fuel Oil Purifier is built especially for the service its name denotes. It has closed flexible hose connections with quick-opening unions at inlet and outlet points and gasketed cast aluminum covers. This construction makes the machine vapor-tight, so that it is entirely safe to purify oil while at a temperature higher than its flash-point, as is often necessary in burning low gravity oils.

Clean fuel oil minimizes wear on cylinder liners, injection feed nozzles and fuel pumps, and removes the trouble attending the burning of oil containing water. Regardless of its previous condition, oil which comes from the De Laval Purifier is *clean*.

DE LAVAL-PURIFIED lubricating oil protects bearings on the M. S. Gulf of Venezuela, recently converted to Sun-Doxford power for the Gulf Refining Company

The De Laval Oil Purifier constantly maintains the lubricating efficiency of oil and makes it possible to keep the same oil in service indefinitely. It minimizes the cost of lubrication while improving the service rendered by the oil. It insures continuous operation of the engine while guarding against damage resulting from insufficient or improper lubrication.

Centrifugal purification is the modern means of maintaining the efficiency of oil. The De Laval Purifier serves its purpose best because a series of discs placed within the bowl or purifying chamber to facilitate purification, multiplies many times the effectiveness of the centrifugal force which is developed.

This is the patented De Laval system of strata distribution. Among other advantages it enables De Laval Purifiers to operate at relatively low speed, thereby insuring greater dependability and durability.

Write today for full details as to how De Laval Oil Purifiers will quickly pay for themselves on your ship.

THE DE LAVAL SEPARATOR COMPANY

165 Broadway
New York

DE LAVAL PACIFIC COMPANY
San Francisco

600 Jackson Boulevard
Chicago

De Laval Oil Purifiers

Please send Bulletin containing further information regarding the De Laval Oil Purifier as checked below:

- () Purification of lubricating oil
() Purification of fuel oil

Name.....

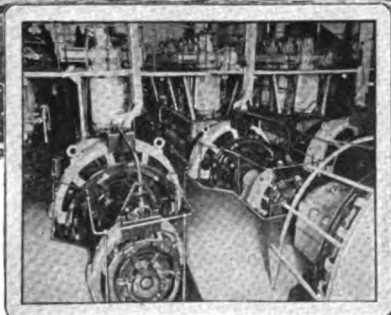
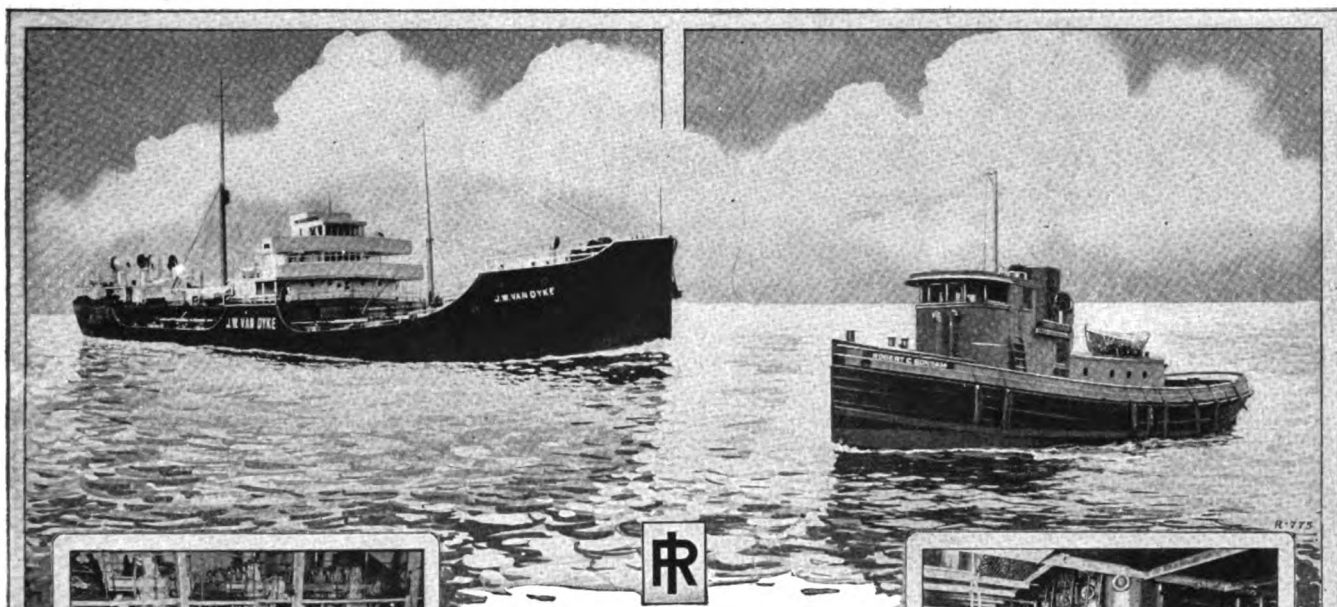
Company.....

Address.....

MR-552D

Please mention MARINE REVIEW when writing to Advertisers

OIL ENGINES FOR EVERY CLASS OF MARINE SERVICE



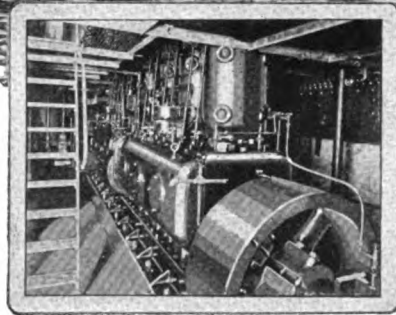
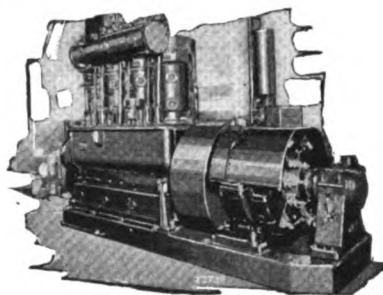
Electric Drive

Close regulation, the essential feature for the successful operation of an oil engine electrically driven craft, will be found in the Ingersoll-Rand oil engines.

Our wide experience in building oil engines for driving generators in both marine and stationary power plants enables us to provide engines of proper characteristics for this class of service.

Auxiliary Generator Sets

The wide experience of the Company in building oil engines for driving generators in both marine and stationary power plants enables it to provide engines of proper characteristics for auxiliary generator service on board large motorships.



Direct Drive

Where much maneuvering is required, reversibility is of prime importance. Ingersoll-Rand Oil Engines for direct drive are maneuvered by a single lever control.

By means of this single lever the engine is started, stopped, and reversed, and its speed varied throughout the entire range in either direction. This single lever control makes it possible, with the Ingersoll-Rand direct-drive engine, to answer bells as quickly and efficiently as with any steam engine plant.

INGERSOLL-RAND COMPANY-11 BROADWAY, NEW YORK CITY

Offices in principal cities the world over

For Canada Refer-CANADIAN INGERSOLL-RAND CO. LIMITED, 260 St. James Street, Montreal, Quebec

Ingersoll-Rand

37-MOE J

Please mention MARINE REVIEW when writing to Advertisers

(Continued from page 387)

States for the fiscal year 1924 amounted to \$6,723,325,525. Of this commerce American ships carried cargo to the value of \$2,443,593,758 or 36½ per cent—more than any other single nationality—though Great Britain was a close second with \$2,314,128,702.

In June, 1925, American vessels carried 1,029,044 tons of cargo through the Panama canal while British ships in the same period carried 502,069 tons. The monthly average of cargo carried through the Panama canal by American ships in 1924 was 1,222,135 tons. This shows an enormous increase since 1915 when the monthly average cargo passing through the Panama canal on American ships was 182,325 tons, which was not exceeded until 1919.

The fleet on the Great Lakes for the season of 1925 comprised 739 vessels of 4,236,760 gross tons. In 1914 there were 548 vessels of 3,031,589 gross tons. During 1924, 42,623,572 long tons of iron ore, 28,869,515 short tons of coal, 15,222,787 net tons of grain and 9,225,624 net tons of stone or a grand total of 98,047,327 net tons of bulk cargo was moved on the Great Lakes. These figures have already been exceeded so far during the season of 1925. It is estimated that the total ore movement will reach 52,000,000 gross tons and that the total for coal will exceed 22,000,000 net tons for 1925.

On the New York State barge canal 386,000 short tons of cargo was moved during the month of July, 1925. The monthly average for 1924 was 290,000 short tons. In June, 1925, vessels totaling 390,671 gross tons passed through the Cape Cod canal. On the Ohio river shipments from Pittsburgh to Wheeling for the month of August, 1925, amounted to 716,142 short tons. On the Allegheny river, 405,495 short tons was carried during September, 1925. For the same period on the Monongahela river, 1,938,145 short tons of cargo was carried. The Mississippi Warrior Line carried 75,283 tons of cargo on the Mississippi river during the month of June, 1925.

Domestic Shipping Is Very Active

While it is vitally necessary for everyone who has the best interests of the American Merchant Marine at heart to co-operate with all the power at his command to increase the foreign carrying trade of our ships, he is dull indeed and lacking in vision who cannot sense the teeming activity of domestic transportation as indicated by the figures quoted above. Never before has business in coastwise traffic been as good as it is now. One New York operator stated recently that the inter-coastal business of his company was functioning more satisfactorily now than at any time since it started.

In 1923 the Eastern Steamship Lines, Inc., operating between New York and Boston, Maine and Nova Scotia, added two new freight ships to their service and followed this in 1924 by building two fast, elaborately equipped and finished passenger steamers. Travel on these boats during the season of 1925 has been up to full capacity and many have been turned away. On account of continued increase in freight traffic, two lake type of cargo ships were bought from

the shipping board during the past summer. After considerable alteration and thorough reconditioning these two vessels are now in service. The same company has been considering plans for a new passenger and cargo ocean liner for the Boston-Yarmouth run. Bids were taken abroad as well as in the United States, but the difference in cost was said to be only 18 per cent and the order has now definitely been placed in this country.

The New England Steamship Co., operating the Fall River and the Marthas' Vineyard Nantucket lines, in 1923 contracted for a new passenger steamer for the Nantucket run. This vessel proved so valuable and satisfactory that a duplicate order was placed in the fall of 1924, the new vessel going into commission April, 1925.

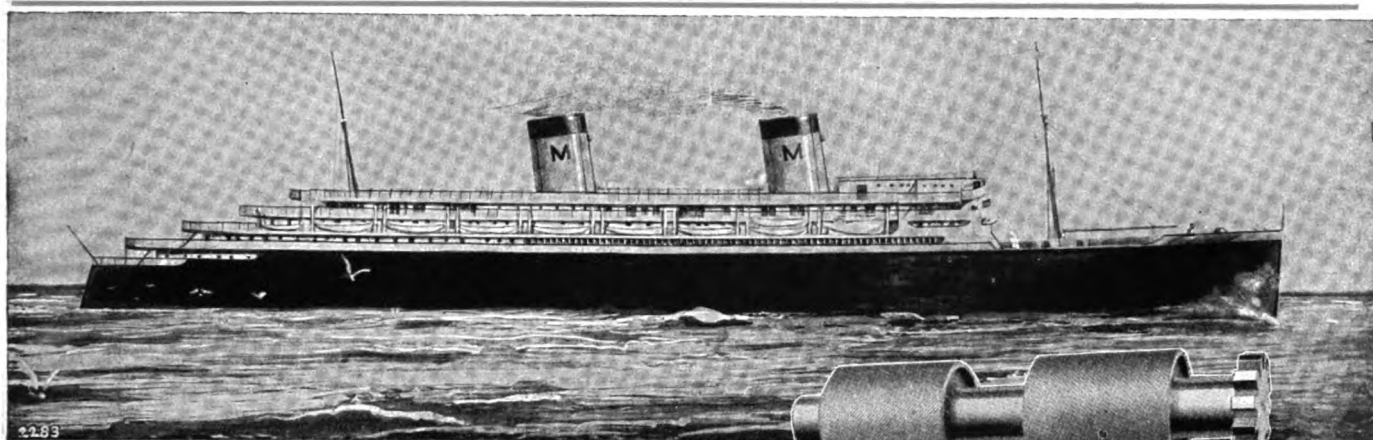
Nothing could be plainer than the rapid expansion of the passenger and freight business of the Clyde-Mallory Line. Since the summer of 1924, this company has placed orders for three fine passenger and cargo liners. Two of these are in commission. Their capacity was entirely absorbed from the start. The company wants the third vessel as quickly as possible and now has under consideration placing an order for two additional vessels. In the meantime the two new fine Old Dominion liners have been pressed into service. The New York and Norfolk service therefore needs new ships. It has been reported that the Cuba Mail Steamship Co. (Ward Line) may build two passenger and cargo vessels for its Cuban and Mexican trade. The tentative plans call for very fast ships of the finest modern type. The New York Porto Rico Line now has under construction an especially fine type of passenger and cargo ocean liner.

Build New and Better Ships

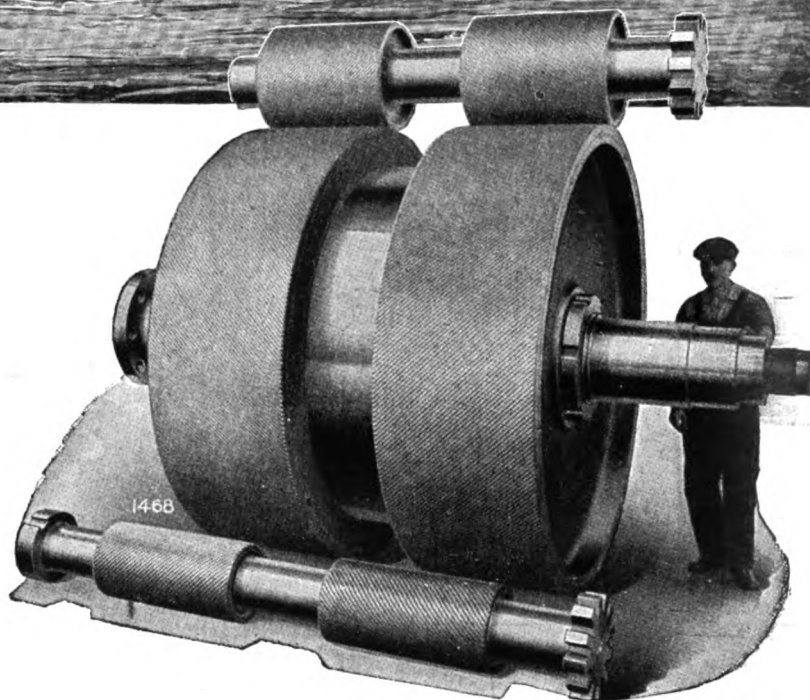
In 1923 the old established coastwise line, the Merchants & Miners Transportation Co., operating between Baltimore, Philadelphia, Norfolk, Boston, Savannah and Jacksonville, placed in commission two new passenger and cargo vessels. This past summer an order was placed by this company for three new ships. When these are completed this company will have in all 5 new ships and 12 old ships, the youngest of which is 19 years old. The Ericsson Line, operating passenger and freight steamers between Baltimore and Philadelphia has just placed an order for two 15 knot steamers, 245 feet long by 47 feet beam, to accommodate 200 passengers.

Intercoastal traffic has been heavy, with consistently good offerings of freight. The Panama-Pacific Line of the International Mercantile Marine for passengers and freight between New York and San Francisco has been so successful that serious consideration has been given and the plans have been prepared for two and possibly four fine, fast modern liners to place in this service. The off-coast and coastwise lines of the Pacific have also had good business. The Admiral Line for instance carried upward of 25,000 passengers on its coastwise vessels during the tourist season. The coastwise passenger business showed an increase of 50 per cent over last season. The Matson Navigation Co. is making new records for

(Continued on page 406)



The Magnificent New
Passenger Vessel,
MALOLO,
To Have
**De Laval
Gears**



THE MALOLO is the largest and most expensively furnished vessel yet laid down in the United States, the designs calling for a 22,000 ton vessel, 582 ft. long with 83 ft. beam and 28 ft. 6 in. draft. Over two years will be required for completion and the contract price is \$6,560,000. She is to be placed upon the San Francisco-Honolulu route and is expected to make the trip in 4½ days. She is to be propelled by two screws each driven by geared turbines, each propelling unit developing 12,500 H.P. at a propeller speed of 120 R.P.M., which will drive the ship at 21 knots. The four De Laval reduction gears are the largest of any yet built in this country, the pitch diameter being 141 in. and the total width of working face, 57 in.

De Laval Turbines and Gears are used on the most notable recent passenger and freight vessels, such as EL OCEANO, MUNARGO, CARABOBO, BOSTON and NEW YORK, as upon the faster and more powerful naval vessels, such as the scout cruisers RICHMOND, TRENTON, MEMPHIS, MARBLEHEAD, CONCORD, etc.

Ask for publication M-52.

De Laval

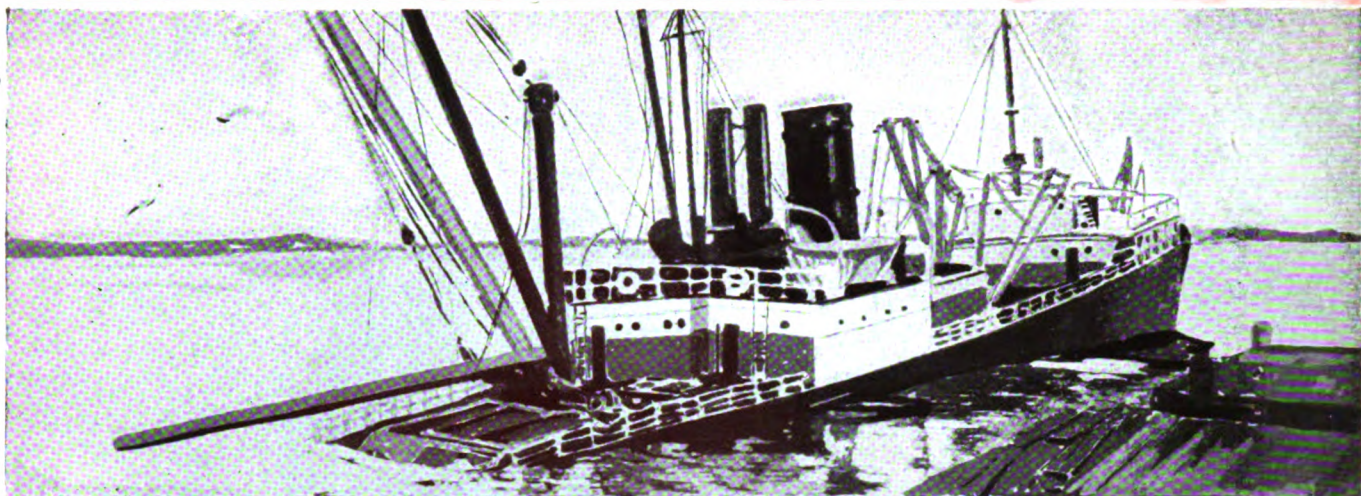
Steam Turbine Co., Trenton, N.J.

LOCAL OFFICES: Atlanta Boston Charlotte Chicago
Cleveland Dallas Denver Duluth Havana Honolulu
Houston Helena Indianapolis Kansas City Los Angeles

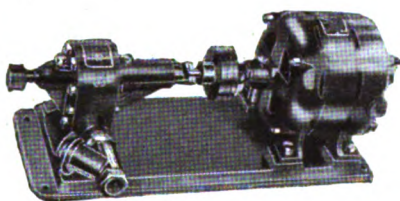


Montreal New York New Orleans Philadelphia Pittsburgh
Portland, Ore. St. Paul Salt Lake City San Francisco
Seattle Spokane Toronto Vancouver 491

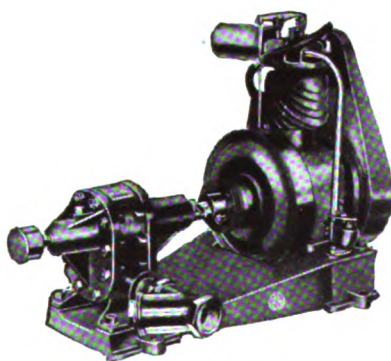
Manufacturers of Steam Turbines, Centrifugal Pumps, Centrifugal Blowers and Compressors, Double Helical Speed Reducing Gears, Worm Gears, Hydraulic Turbines, Flexible Couplings and Special Centrifugal Machinery



Efficient "Pumping" ~is as vital as efficient Propulsion



Electrically Driven



Gasoline Driven

DOWN the winding steel stairway in the engine room of the modern steamship, great droning motors strain and whirl to spin the massive twin-drive shafts against tremendous water resistance.

Aboard these same steamships the pumps—Fuel Oil Service Pumps, Lubricating Oil Service Pumps, Water Service Pumps, Bilge Pumps, each to their own task—powerful, economical, ESSENTIAL—must be as thoroughly *efficient* in their performance of duty as the great driving force behind the screws.

The American Machine & Foundry Co., has devoted years to the advancement of pumping equipment—years of experimental research that have produced the finest line of Rotary All-Service, directly-connected pumps on the market. A type for every ship afloat.

NO GEARS to wear out. NO VIBRATION to cause trouble. MINIMUM OVERHEAD in attention and upkeep. All-bronze for salt water; bronze fitted for fresh water. Cast Iron for oil service.

American Machine & Foundry Co.
Brooklyn, New York, U. S. A.

Machines for: Feeding—Weighing—Bagging—Filling—Packing—
Sealing—Labeling and Bottle Capping—Package Wrapping—Bread
Wrapping—Cigar and Cigarette Making Machines—Stemming
Machines—Color Sorting Machines—Litho Transferring Machines,
—Vacuum and Pressure Pumps.

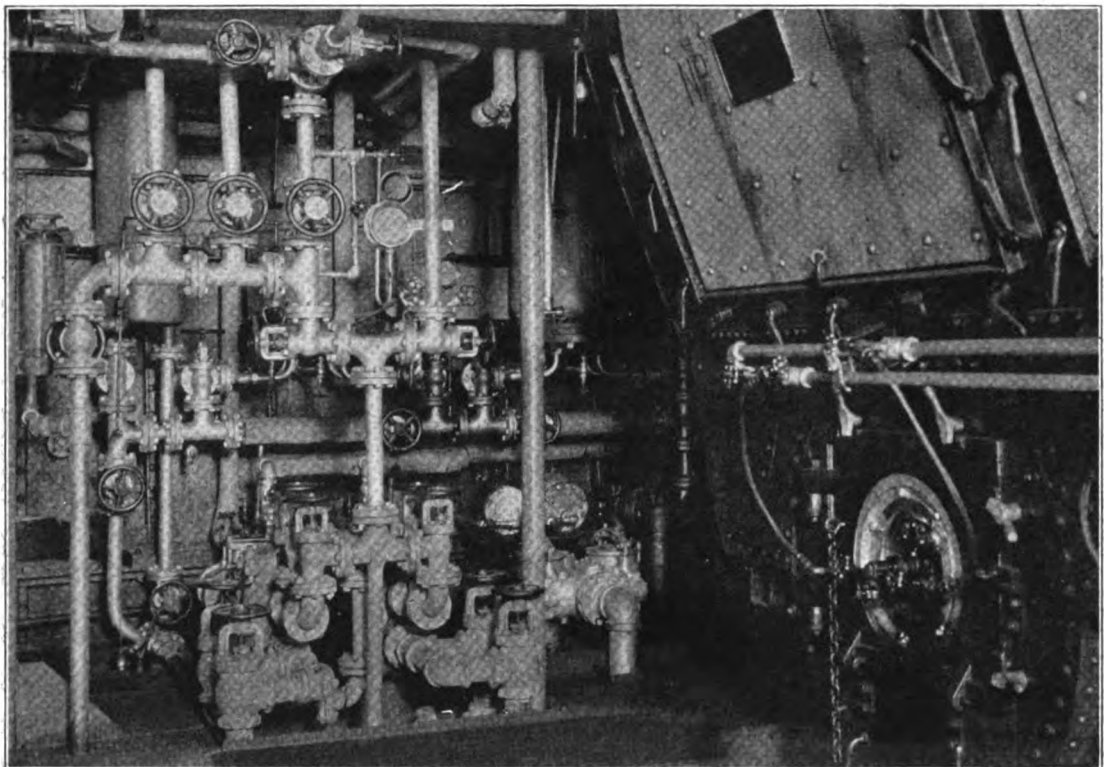
AMF STANDARD



Please mention MARINE REVIEW when writing to Advertisers

Typical Peabody Oil Burning Set

as used on steamers of
Hudson River Day Line
and other vessels



**Hinged Type Registers and Peabody-
Fisher Wide Range Burners**

*Give Complete Control of Air and Oil.
Maximum Economy of Fuel, combined
with ready access to Furnaces and all
parts of equipment.*



PEABODY ENGINEERING CORPORATION
110 East 42nd Street, New York

Please mention MARINE REVIEW when writing to Advertisers

(Continued from page 392)

termine the viscosity and automatically control the steam valve of the oil heaters to keep the temperature at the point to give the right viscosity regardless of the quantity and quality of oil used. Photographs of other types of equipment will also be shown. The booth of this company will be in charge of Edwin B. Sadtler, who directs the marine sales of the Peabody Engineering Corp., assisted by Messrs. Leask, Dyer, Warner, Wroom and Hayes.

PNEUMERCATOR CO., INC., Sperry building, Brooklyn, N. Y.—This company will occupy booth No. 7. A number of different models of pneumercator tank gauges will be shown. There will also, of course, be numerous photographs of installations and catalogs for general information. The representatives in charge for the company will be C. J. Wicks, secretary; and Wm. Thomas, chief engineer.

POWER SPECIALTY CO., 111 Broadway, New York—This company will occupy booth No. 22 and will have on exhibition a line of Foster equipment such as the marine economizers, convection-type superheaters, the radiant heat-type superheaters, and the waste heat-type superheaters. This equipment is suitable for ocean, river and lake work. There will also be exhibited Foster hand hole fittings for boilers and other pressure vessels. Those in attendance will be Jos. J. Nelis, H. W. Parsons and C. A. Ruuth.

PREFERRED UTILITIES CO., 33 West Sixtieth street, New York—This company is acting as Eastern distributor for the W. S. Ray Mfg. Co., San Francisco, who manufactures the Ray rotary fuel oil burner. There will be exhibited in booth No. 91 a Ray steam turbine drive rotary fuel oil burner for power boilers; a Ray electric motor drive rotary fuel oil burner—one large size for power boilers and one small size for heating boilers aboard oil engine driven vessels; also Ray oil burning galley ranges. This equipment is not entirely strange to the marine field as it has been installed in some vessels on the west coast. There is a claim of saving in fuel by means of the Ray burner. The following representatives will be in attendance during the marine show: S. D. Rickard, G. W. Bohn, J. S. Spalding and Arthur Roberts.

PROPELLER CLUB, New York—The Propeller Club will occupy booth No. 43 and the activities of the club will be directly in charge of a show committee of six, under the chairmanship of Ernest M. Roberts, assisted by T. J. Smith, Wm. C. Gray, Wm. Hayes, N. R. Sibley and H. M. Wick. There will also be a sub-committee of thirty so that a number of representatives will always be on hand. All of these men will wear badges identifying them as being on the Propeller club's show committee. There will be a registration desk in the Propeller booth where all members are expected to sign up as they visit the show, and they will then be given the Propeller club's special button for the show. One of the famous noonday luncheons will be held during marine week on November 10 at 12:30 p. m., probably at the Engineers club, and it is expected that the Hon. Herbert Hoover will be the leading speaker.

RADIO CORP., 233 Broadway, New York—Booth No. 77 will be occupied by this company. A model E. T. 3636 tube transmitter, a model E. T. 3627 tube transmitter, a type I. P. 501 marine radio receiver and a R. C. A. radio direction finder will be exhibited at the show. Full details and particulars will be given concerning their operation. T. M. Stevens, general superintendent of the marine department and P. C. Ringgold, assistant general superintendent, will represent the company at the exposition.

SELBY, BATTERSBY & CO., 810-12 Noble

street, Philadelphia—This company will exhibit in booth No. 9. The display will consist of sections of a typical smoking room, stateroom, and passageway, on ship board, covered with Selbalith deck covering. This special deck covering will be shown as an ordinary deck sheathing over which cork-composition or rubber tile may be laid and it will also be shown as a complete deck covering in various designs and colors. Selbalith is furnished in eight or more colors so that the display will be attractive and will demonstrate that this material can be furnished to harmonize with any color scheme. Geo. W. Selby and Edw. Battersby, officers of the company, will be in charge of the booth and will be in attendance during the marine show.

SHARPLES SPECIALTY CO., Twenty-third & Westmoreland streets, Philadelphia—In booth No. 46 this company will exhibit a totally inclosed or pressurized super centrifuge, which was designed primarily for the purification of diesel engine fuel oils, particularly of the lower gravities, that need to be heated above the flash point in order to secure efficient separation. The totally enclosed type of machine enables the diesel operator to handle his fuels without the danger of escape of vapors into the engine room, and without the necessity for breaking any pipe connections to clean the machine. A cross section of a lubricating oil purifier will be shown. This equipment gives a very clear picture of all the working parts of the Sharples super centrifuge. The exhibit will be in charge of H. H. LaMent, vice president—sales.

SPERRY GYROSCOPE CO., Manhattan Bridge Plaza, Brooklyn, N. Y.—Will occupy booth No. 75. This company will exhibit a complete merchant marine type gyro-compass equipment and a specially constructed gyroscopic apparatus which will show the earth's rotation, the first time such an apparatus has been placed on public exhibition; a complete gyro-pilot automatic steering equipment of the type now used on a very large number of merchant vessels throughout the world; and a gyro-pilot of the type being used largely on new vessels and diesel equipped vessels where the control unit is mounted in the wheel house and the power unit is mounted in the steering engine room and attached directly to the controls of the steering equipment, whether steam or hydro-electric. There will also be exhibited a new development in incandescent searchlights and high intensity arc searchlights; a visible air whistle; helm angle indicator equipment, and an engine speed indicator system. Some of this equipment which will be shown is that which is being specially constructed for the new Matson liner the steamship MALOLO. The following will represent the company during the exposition: T. A. Morgan, R. B. Lea, R. E. Gillmor, C. D. Jobson, O. B. Whitaker, J. R. Conover and J. A. Fitz.

B. F. STURTEVANT CO., Hyde Park, Boston—This company will occupy booth No. 72. The exhibit will consist of turbines for driving fans and pumps, motor driven ventilation fans, small vertical engines, and possibly a forced draft blower of a certain type, and a gear transmission such as are now coming into use quite widely for fans driven by means of turbines. E. B. Williams and Mr. Jewett will represent the B. F. Sturtevant Co. at the marine exposition.

THORKOTE PRODUCTS CO., INC., 81 Coffey street, Brooklyn, N. Y.—The exhibit of this company will be held in booth No. 10 and will be in charge of N. Smith. A variety of grades of the products of the company will be exhibited; also the results of tests and experiments will be demonstrated. Different samples will be on display. The products of the company are used particularly for

protection against corrosion; for instance, exposed portions of tail shafts, also for stern frames, bilges, inner bottoms, cast iron propellers, fore peak tanks and other parts and equipment of ships.

P. S. THORSEN & CO., INC., 81 Coffey street, Brooklyn, N. Y.—Will occupy booth No. 10. This company will exhibit a variety of insulation material and its application to marine installations. The exhibit will be in charge of M. E. Bullard, vice president and general manager, who will be assisted by R. S. Warner, W. L. Davies, V. Menig and T. Drydale.

TODD SHIPYARDS CORP., 25 Broadway, New York—Will exhibit in booth No. 2 at the marine exposition. There will be on display in the Todd booth the new rotary fuel oil burner for low pressure installations. This burner is exhibited for the first time and has been especially designed for low pressure jobs. The Todd natural draft air register for marine and power plants; the Todd marine lamp; and the Todd A. R. welder of the portable type will all be exhibited. Russell Bowes, in charge of oil burning apparatus; J. K. Wheten, oil burning lamps; and J. G. Broderick, in charge of the welder exhibit will represent the Todd company.

UNITED STATES LINES—Will have an exhibit in booth No. 69. A model of the LEVIATHAN and interesting features of the travel service offered by this company will be shown. The space is, of course, reserved in the name of the United States Shipping Board Fleet Corp., and displays showing the work of the shipping board and the Emergency Fleet in general will probably also be shown. The exhibit will be attended by representatives of the U. S. Lines.

GEORGE WALKER, SHIP INSTRUMENTS, 255 Atlantic avenue, Boston—There will be demonstrated in booth No. 24 a new type of propeller log invented by Mr. Walker. A similar instrument has been thoroughly tried out at the Brooklyn navy yard. This instrument is applicable to twin, triple and quadruple screw vessels and will give the revolutions of each shaft and the average revolutions, and will give the speed in knots corresponding to the average revolutions of the shafts. This is an interesting and ingenious instrument. Geo. Walker, the inventor, will be in attendance and will be assisted by H. A. Chase, superintendent of the Cummings Machine Works, Boston.

WAR DEPARTMENT, Washington — The exhibit of the war department will be in one of the several booths reserved by the United States government. These booths are Nos. 25, 26, 27 and 28. The activities of the War department will be represented by the marine activities of the United States Engineers. Their marine activities are much more widespread than the average person would think. They not only operate boats but build various types of crafts with many interesting engineering features. They build boats for the Mississippi and Ohio rivers and also large ocean going dredges for use in the harbors on the Atlantic and Pacific coasts. This exhibit will consist of a number of models of dredges; also plans and specifications and photographs of all types of dredges and other vessels operated by the Engineers department. The special machinery employed in various types of floating plants will also be shown by plans and photographs. The exhibit will be in charge of engineer officers stationed in the New York district.

WESTINGHOUSE ELECTRIC & MFG. CO., East Pittsburgh, Pa.—Booth No. 45 will be the home of this company during the marine exposition. The main feature of the exhibit

(Continued on page 408)

BECLAWAT

Balanced Frameless Windows

PROTECTION AGAINST WIND AND STORM



Promenade Deck Windows S. S. President Polk

Enhances the beauty of your vessels and gives safety and comfort to your passengers.

Relieves congestion in social hall in inclement weather by keeping your passengers on deck, where they should be to get the maximum benefit of ocean travel.

36 American ships including all of the President class are equipped with *Beclawat* windows. Among the new installations are:

S/S. Siboney, Ward Line
S/S Orizaba, Ward Line
S/S Bienville, So. Pac. Co.
S/S Cherokee, Clyde Line
S/S Seminole, Clyde Line

S/S Mohawk, Clyde Line
S/S Coama, N. Y. & P. R. Line
S/S Malola, Matson Line
M/S Aorangi, Royal Mail
S/S Republic, U. S. Line

S/S Mauretania, Cunard Line
S/S Transylvania, Cunard Line
S/S Scythia, Cunard Line
S/S Corinthia, Cunard Line
S/S Letitia, Cunard Line

Kearfott Engineering Company, Inc.

95 LIBERTY STREET, NEW YORK

Please mention MARINE REVIEW when writing to Advertisers

(Continued from page 388)

ner of the competition will receive a free trip to Europe on the LEVIATHAN and will be entertained by Boy Scout organizations abroad. The winner of the second prize will be given a coastwise voyage.

The annual banquet of the association will be held at 7:30 p.m. on the evening of Armistice day Nov. 11, at the Waldorf-Astoria, New York. Among the speakers will be Homer L. Ferguson, president of the Newport News Shipbuilding & Dry Dock Co. An amateur performance will be given by men in the marine industry. This performance will be in the nature of a burlesque on recent developments in shipping affairs.

More than fifty radio stations covering every state in the union have volunteered to co-operate in broadcasting marine programs. These will consist of the proceedings in New York during marine week, and addresses of local speakers on marine topics.

Naval Architects and Marine Engineers

An interesting program of fourteen papers will be presented at the thirty-third general meeting of the Society of Naval Architects and Marine Engineers. Seven papers by civilians and four papers by naval officers and one paper by an army officer, deal with subjects of interest to the designer and operator of merchant ships. These papers will be read during the two days' meetings. The titles of the papers, the authors and the order in which they are to be delivered follows:

Thursday, Nov. 12, 1925

1. "New Developments in High Vacuum Apparatus," by G. L. Kothny, member.

2. "The Effect of the Radius of the Fillets on the Stresses Around Rectangular Opening in Plates," by Thomas H. Frost, Lieut. Paul E. Pihl, C. C., U. S. N. and Lieut. Oliver D. Colvin, Jr., C. C., U. S. N., visitors.

3. "A Simple Method of Designing Propellers," by Rear Admiral Charles W. Dyson, U. S. N., council member.

4. "Combined Stream Line Rudder and Guide Vanes, Latest Development of Contrapropellers," by Olav Overgaard, member.

5. "Model Experiments with River Towboats—Stern Wheel and Tunnel Propeller Types Compared," by Capt. William McEntee C. C., U. S. N., council member.

6. "Transportation on Inland Waterways," by Brig. Gen. T. Q. Ashburn, U. S. A., visitor.

Friday, Nov. 13, 1925

7. "Methods of Finding the Metacentric Height of Vessels for Operating Purposes and the Application of Graphics to the Solution of the Problem," by Henry C. Adams, 2nd, member.

8. "The Design of Passenger Vessels for the Great Lakes," by Prof. Herbert C. Sadler, council member, and Frank E. Kirby, honorary vice president.

9. "Torsional Vibration in the Diesel Engine," by Frank M. Lewis, member.

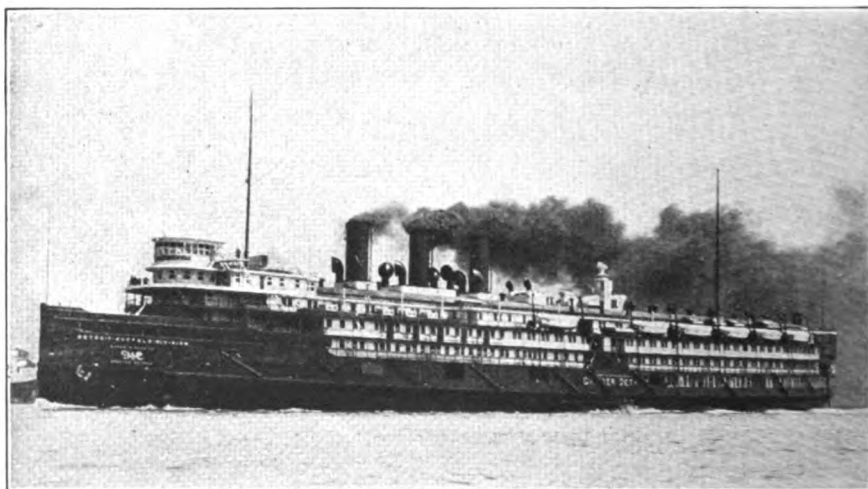
10. "The Launch of the Airplane Carrier, U. S. S. Saratoga," by Ernest H. Rigg, council member.

11. "An Analysis of a Failure of Keel
(Continued on page 406)

A Model of This Steamer Will Be Exhibited

A model of this steamship has recently been completed in New York for the Detroit and Cleveland Navigation Co. The cost is \$10,000, and it is one of the most complete models, correct to the smallest detail, ever made. It is about six feet in length. One side is a perfect outboard replica, while the opposite side is open at various places showing the interior arrangement of the dining room, lounge, passenger suites and other quarters, in faithful detail, including the actual decorations and equipment. The machinery space with the main engine in place is also reproduced.

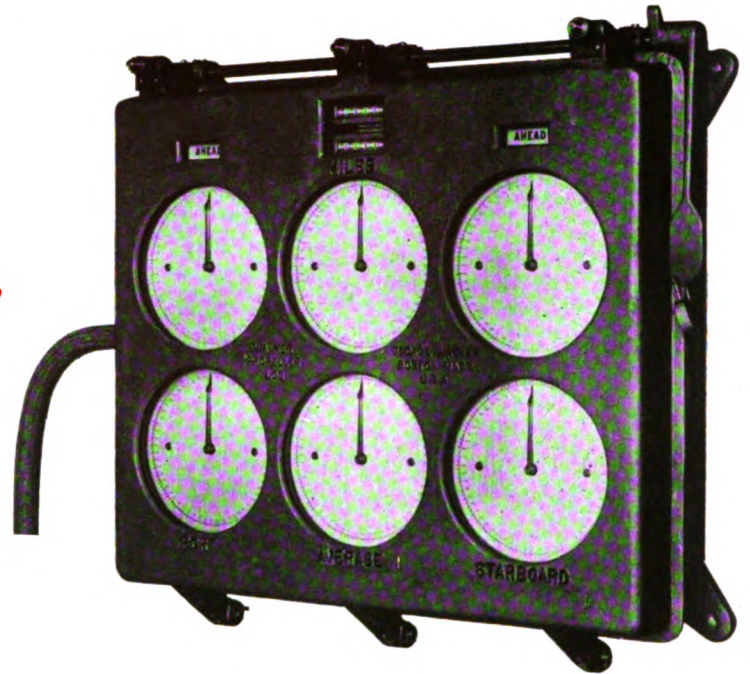
Marine Review will exhibit this splendid model of the Greater Detroit in its own space, booth No. 33, at the Marine exposition in New York, Nov. 9-14.



GREATER DETROIT—GREAT LAKES PASSENGER STEAMER—THIS VESSEL AND HER SISTER SHIP, THE GREATER BUFFALO, WERE COMPLETED IN THE FALL OF 1924 BY THE AMERICAN SHIPBUILDING CO., AT A COST OF \$7,000,000. BOTH STEAMERS OPERATE IN THE PASSENGER AND PACKAGE FREIGHT SERVICE OF THE DETROIT AND CLEVELAND NAVIGATION CO. BETWEEN DETROIT AND CLEVELAND.

The Propeller Log

*A New Invention
that Automatically
Registers Ship
Propeller Speeds
and Mileage*



The invention and perfection of The Propeller Log marks a distinct forward step in navigation progress, and provides the navigator with an instrument he has long needed and desired.

The instrument is electrically operated and is absolutely automatic in all its functions.

The instrument shows, minute by minute, the exact number of revolutions of each propeller and the average number of revolutions of all the propellers, at any and all speeds.

The instrument indicates the direction of revolutions of each propeller.

The instrument computes, from the average propeller revolutions per minute, the distance traveled, and continuously records the miles traveled.

Provision is made for the correct mileage registration whether the ship is heavily

laden or sailing in ballast, whether her bottom is clean or foul, etc.

The instrument is designed for ships having one, two, three or four propellers.

The instrument can be located anywhere desired on the ship, or any number of instruments can be used, located in different parts of the ship.

The construction of the instrument is strong, simple and durable.

The Propeller Log can be installed on ships already in commission as readily as on ships under construction.

The instrument has been thoroughly tested over a long period of time and is ready for installation.

The Propeller Log will be shown and demonstrated at the American Marine Exposition, New York, November 9th to 14th.

Catalogue and information forwarded upon request.

George Walker

255 Atlantic Ave., Boston, Mass.

Please mention MARINE REVIEW when writing to Advertisers

(Continued from page 389)

revenue without the public feeling it.

Freight rates and charters throughout the world are on a very low parity, and very few steamship companies are making any actual profit or even a beginning towards a return on their investment in steamship tonnage.

The primary cause of this depressed condition in the shipping world is the over-supply of tonnage available at all times for the different trades. The one move which will correct the condition is to tie up a percentage of these vessels, so that only enough tonnage will be available to take care of the world's needs.

One of the great factors which has most helped to depress the market has been the running of United States government owned vessels in the various trade routes of the world, with too many vessels operating on a route, so that the majority of such vessels operated with not over 50 per cent of cargo capacity filled on the round trip. Such operation entails tremendous loss to the government, and is bound to mean the withdrawal from such trades for the time being of well operated steamship companies.

The prospects for the next four or five years look somewhat brighter, provided the United States government follows the policy it now seems embarked upon of turning over to private operators the tonnage which it has been operating. To do this, however, the government has to assume an attitude of making every possible concession in favor of the buyer, including a very low price and no onerous conditions, as otherwise the foreign shipowner, with none of the handicaps which now exist against the American flag ship in the way of high wages and repair costs, has too great an advantage over the American ship operator to permit the American operator to make money.

If a large percentage of the ships now run by the shipping board are transferred to private hands in the course of the next two years, it is my judgment that we shall see a reaction in the world's market when the major part or all of the ships have been transferred to private operation.

My reason for this feeling is that private initiative to survive must operate the boats in the trade routes which they undertake to maintain for the government, in the interests of the American shipper and the American people, and minimize their expenses and increase their rates of freight in every place possible in order to make even a small living.

It stands to reason that private in-

itiative will watch the details of operation and endeavor to increase the revenue in every trade where it is possible to do so, and still secure business, to a greater degree than the government has been able to do in its operation of the various routes.

If the government does succeed in selling most of the trade routes and private initiative, by this means, becomes predominant in American shipping, we will then see better times in the shipping trade of the world, say, about two years hence, and within a year thereafter—so soon as there

It is my firm conviction, however, that to keep the American flag on the sea, it is necessary for the government to undertake to provide some kind of compensation for mail carried on passenger routes to be maintained, and, either by direct or indirect methods, the equalization of the wage costs on American freighters operated throughout the world.

We have our greatest opportunity in the next five years to maintain and preserve the American flag on the seas if the government and private initiative work together to the proper end, but, failing such co-operation necessary to accomplish the end which most Americans are in favor of, we shall see once more the gradual disappearance of the American flag ship from the sea, with the greatest possible prejudice to American shippers and producers by being again forced to ship the majority of their goods by foreign flag ships, and the government itself will have an inadequate auxiliary type of vessel available in case of military or naval emergency.

* * *

By Hugo P. Frear

Naval Architect, Bethlehem Shipbuilding Corp.

IT WAS prophesied early after the signing of the armistice that our shipyards would have to depend on coastwise and special types of ves-



HUGO P. FREAR

Program of Activities Marine Week Nov. 9-14

Marine Exposition—A marine exhibition will be held under the auspices of the American Marine Association Inc., in the armory of the Two Hundred and Twelfth Anti-Aircraft Regiment at Sixty-second street and Columbus avenue, New York, beginning Nov. 9 and ending Nov. 14. The exhibition will be open daily from 12:30 to 10:30 p. m.

Annual Banquet—The annual banquet of the American Marine association will be held in the Grand ball room of the Waldorf-Astoria, New York, on Armistice day, Wednesday, Nov. 11, at 7:30 p. m. Homer L. Ferguson of Newport News will speak.

Naval Architects and Marine Engineers—The thirty-third general meeting of the Society of Naval Architects and Marine Engineers will be held in the Engineering Societies building, 29 West Thirty-ninth street, New York, Thursday and Friday, Nov. 12 and 13. Professional sessions will begin at 10 a. m. each day.

Annual Banquet—The annual banquet of the Society of Naval Architects and Marine Engineers will be held in the Grand ball room of the Waldorf-Astoria, New York, on Friday, Nov. 13 at 7:45 p. m. Preceding the banquet there will be a reception beginning at 6:45 p. m.

has begun to be a return on the capital invested in the ships, the probabilities are that American shipyards will begin to get inquiries for the building of the types of ship to maintain and improve the routes taken over by the different private operating companies.

Commencing with that time there should be a gradual return of modernizing and dieselization of freight ships and of building of such new liner types of ships, under the American flag, as may be a commercially operable proposition.

sels for the present at least. Such has proved to be the case. Practically everything that has been offered since that time has been of this character. The few exceptions, consisting principally of tankers on which

(Continued on page 408)



THIS JOINT
is one of the reasons why
ELLIS STEEL HULLS
are strong yet light

ELLIS CHANNEL SYSTEM
OF STEEL HULL CONSTRUCTION
PATENTED
30 Church Street New York

**NEW YORK CENTRAL'S ELLIS SYSTEM STEEL BARGES
LINING UP FOR SERVICE SOON AFTER LAUNCHING**

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(Continued from page 396)

freight moved and passengers carried and the Pacific Steamship Co. is paying substantial dividends. The Matson company is expanding to meet the growing transportation needs of the Hawaiian Islands. Passenger travel to the islands has become very popular, and as everyone knows, the largest and finest passenger liner ever built in American yards is now under construction for this company with delivery expected early in 1927. The Inter-Island Navigation Co. now under Matson control added a new passenger steamer to its fleet in 1923 and plans are now under way for an additional vessel.

Several of the big industrial fleets like the Isthmian, the Standard Oil and the United Fruit are very active. The Isthmian line now has under construction two Welland canal size diesel electric and double acting diesel freighters, duplicate in size and general arrangement of the two diesel freighters constructed in 1923 for Great Lakes, St. Lawrence and Ocean service. This company is also seriously considering adding two or more large fast twin screw diesel propelled freighters of perhaps 14,000 tons dead weight each.

Government Sells to Private Owners

Sales of shipping board vessels and entire service to private operators have been going on at an exceptionally brisk rate until quite recently when the board and Admiral Palmer came to an acute difference of policy in regard to sales, and the Admiral's resignation was requested. The Dollar company gave a start to the selling program over two years ago by buying seven of the President type of ships and placed them in a newly inaugurated round-the-world service. That the Dollar round-the-world service has come to stay and is making real headway is clearly indicated by the fact that, after the *PRESIDENT POLK* was seriously damaged at her dock in Brooklyn, N. Y., by fire, about \$500,000 was expended in elaborately rebuilding, in adding greater passenger accommodations than she had originally, and then replacing her in service. The same company was successful in its bid for the five President ships operated by the Pacific Mail Steamship Co. from San Francisco to the Orient. Then the Ford Motor Co. bought 200 shipping board ships for scrapping. After which followed in quick succession the sale of the American Palmetto line comprising six freight vessels to the Carolina Co., Charleston, the American Export lines engaged in the New York, Philadelphia, Baltimore to Mediterranean and Black sea ports, comprising 18 cargo vessels, to the Export Steamship Co., New York.

Negotiations have practically been completed for the sale of the American Diamond line operating 12 vessels from Atlantic ports to Antwerp and Rotterdam; the American Yankee line operating 6 vessels from Atlantic ports to German ports; the Pan-America line comprising 4 passenger and cargo vessels of the 535-foot type, operated by the Munson Steamship Lines between New York and the East coast of South America; the American Republics line operated in the South American freight trade; and the Pacific Austra-

lian line. The consummation of these sales have been held up for the time being, but they should and may be carried through in due course.

Diesel Engine Work Underway

Conversion of steam vessels to diesel is under way including 14 for the shipping board, 2 for the Standard Oil Co. of N. J. and one for the Ford Motor Co., the *LIO* a large oil tanker, a large diesel electric dredge and numerous smaller craft such as tugs and work boats. The Pennsylvania railroad is building new floating equipment using diesel electric power. The New York Central is considering the building of two tugs with diesel drive, and a diesel lighter and a steam ferry boat for the same company have recently been completed. Two diesel electric tugs have been ordered by the Wilmington Transportation Co., Los Angeles, for approximately \$125,000 each. Plans are under way for two ferry boats for the Key System Transit Co. in San Francisco. New York city has recently requested bids on a new ferry boat to cost over \$800,000. The General Petroleum Corp., San Francisco, has recently placed in commission a new shallow draft diesel electric tanker, and a similar vessel is now under construction for this company. There is considerable activity in the building of hopper and pipe line dredges. In this type of craft diesel and diesel electric power for propulsion and operation is recognized as practically standard practice.

The present and potential activity of the marine industry cannot be ignored. With a government policy practically helpful and encouraging to the upbuilding of a privately operated merchant marine, with such unfair handicaps as now exist removed and with the inevitable expansion of foreign trade, the future of the American merchant marine looks promising. The growth must be slow to be permanent and satisfactory.

(Continued from page 402)

Blocks in a Dry Dock," by Lieut. Commander Everett L. Gayhart, C. C., U. S. N. member.

12. *"Some Matters Relating to Large Airships*," by Commander Garland Fulton, C. C., U. S. N., member.

13. *"The Aerodynamics of Yacht Sails*," by Prof. Edward P. Warner, member and Shatswell Ober, visitor.

14. *"The Double Acting, Two Cycle Oil Engine*," by Olav E. Jorgensen, member.

The social feature of the meeting of the Society of Naval Architects and Marine Engineers will be the annual banquet which will be held as usual in the Grand ball room of the Waldorf-Astoria, Thirty-fourth street and Fifth avenue, New York, on Friday evening, Nov. 13 at 7:45 p.m. Immediately preceding the banquet there will be a reception beginning at 6:45 p.m. The popularity of this event may be appreciated by the fact that the committee on arrangements has decided to limit the total number to 500.

SUPERHEAT

Superheat—A Proven Fact

The superheating of steam was early recognized as very desirable as a means of increasing efficiency while decreasing operating costs. But it took many years to produce a reliable superheater. Today, there are over 3,000 ships, flying all flags, equipped with Elesco Type fire-tube superheaters, which type has proven to be the one that satisfies all requirements.

The use of high degree superheat effects a saving in coal and water and also increases the capacity of the boiler and the efficiency of the engine or turbine. Efficiency of the boiler is still further improved by reason of the additional heating surface introduced by the superheater.

Elesco fire tube superheaters are adaptable to either new or existing boilers, requiring no change in design or construction. Their construction provides easy access to all screwed joints, easy removal of parts and permits thorough cleaning of tubes when required.

The units do not retard gases more than retarders. In fact, the superheater in no way interferes with the normal operation and functioning of the boiler. Its ruggedness assures an absence of failures.

You cannot compete with the more efficient ships without superheaters. Have you the facts?

THE SUPERHEATER COMPANY

17 East 42nd Street
NEW YORK



Peoples Gas Building
CHICAGO

Canada: The Superheater Company Limited, Montreal
Todd Shipyards Corporation, Licensed by The Superheater Company, under Schmidt and other Patents.



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(Continued from page 404)

bids have been asked, were never intended to be built in this country and were eventually contracted for abroad. While general expansion of business should naturally improve shipbuilding there must be some limit or point of saturation to the number of vessels that can be employed profitably in domestic trade. Yet there are still opportunities for special types which have thus far received little attention and these are being carefully studied by some interests.

As with the housing situation, the natural growth or replacement of coastwise vessels was retarded and came to a practical stand still during the war. Local or domestic demands have stimulated construction in both of these industries, but the time is fast approaching when supply will more nearly equal or pass demand.

On account of the number of shipyards living from hand to mouth, competition has been too keen for profit and successful bidders have usually been accused of taking work at less than cost of direct labor and material. The presumption is that one builder after another in order to hold its organization together becomes optimistic enough to take work under these conditions in the hope of recovering when shipbuilding improves. When or how these hoped for improvements will or

can be realized no one has been able to predict.

Spasmodic demands for the above type of vessels may occur periodically, but it is a question if shipbuilding generally in this country will be considered on a sound or satisfactory basis until there is more of a world demand for tonnage and we are able to build ships at a profit for foreign trade. Probably anything that could be said in this connection has been said repeatedly in one form or another.

Under American standards of living, cost of construction and laws, few hope this will ever be realized without direct government aid. In the writer's opinion this will not be extended substantially until the majority of voters are educated up to the point of demanding it. In the meantime, the ship owner and shipbuilder must patiently keep nibbling away to secure what favorable legislation they can.

* * *

By William Francis Gibbs

President, Gibbs Brothers, Inc.

THE future of the American built merchant marine depends upon solving the problem of the great difference in the cost of building a ship in the United States and abroad. Un-

til some method is found of equalizing these capital costs to place Americans with American built ships on



WILLIAM FRANCIS GIBBS

equality with the rest of the sea-faring world the American built merchant marine will never come to pass.

Description of Exhibits at Marine Exposition Continued

(Continued from page 400)

will be one of the generating units and the driving motor for the yacht ALOHA... This barkantine rigged yacht of 659 tons, owned by Commodore James of the New York Yacht Club, is one of the largest and finest afloat and is very well known in the yachting world. There will be exhibited the driving motor of the yacht ALOHA, 640 horsepower; one of the three main generators and exciter, yacht ALOHA; switchboard, yacht ALOHA, showing the latest development in marine control boards; Westinghouse type SK marine drip proof self ventilated motors for under deck auxiliary service; a type CK marine watertight motor for deck service; controllers and resistors for deck and under deck service; marine fans, and transparencies showing Westinghouse success in the marine field. The following will represent the company during the marine exhibition: G. H. Froebel, manager marine department; W. M. Bassett, assistant manager, marine department; C. C. MacMillan, marine department; W. A. McGill, marine department; W. E. Thau, manager marine engineering department; H. C. Coleman, marine engineering department, all of East Pittsburgh; and E. F. Clark, L. D. Howell, H. L. MacCarter, P. Catron, all of the marine department of New York; and P. A. Sensenig, publicity department of New York, and P. H. Grunnagle and J. H. Seltzer of the publicity department of East Pittsburgh.

C. H. WHEELER MFG. CO., Lehigh & Sedgley avenues, Philadelphia—This company

has specialized in the building of condensers and condenser auxiliaries during a great many years. It has been in the forefront of developments in this special branch of engineering. The company will exhibit at the marine show in booth No. 42. The particular feature of its equipment is the application of the steam air ejector, "The Radojet," for marine condensers. Several different types of Radojet have been developed. The exhibit will consist of a two stage Radojet, a two stage Radojet with combined inter and after condenser for closed feed water systems, a turbine driven condensate removal pump and a low pressure Radojet augments. In addition to this there will also be shown an absorption dynamometer of the Froude type for which this company holds an exclusive license in the United States. The company will be represented by G. L. Kothny and J. Dobson of the Philadelphia office; and C. Lang and J. Mullan of the New York office.

WINTON ENGINE CO., Cleveland—This company will occupy booth No. 56. There will be displayed in this booth one of the Winton model 116 sixcylinder, full diesel type marine engines; and a single-cylinder model 118 Winton air compressor set. This engine and air compressor set are of the latest Winton design and are particularly noteworthy because of their clean-cut, symmetrical appearance and marked improvements in design and construction. The engine has 10-inch bore, 14-inch stroke, and is of the four-cycle type, and develops 300 horsepower at 450 revolutions per minute. It is furnished in both

port and starboard types to facilitate operation in twin screw installations. This type of engine is suitable either for direct or electric drive. The Winton Engine Co. will be represented at the marine exposition by A. G. Griesse, Inc., 331 Madison avenue, New York; Walter H. Moreton Corp., 780 Commonwealth avenue, Boston; R. L. Fryer, 430 Transportation building, Washington; and F. C. Erdman Co., Union Trust building, Cleveland. Mr. Griesse will have charge of the display. The company's exhibition headquarters will be at his salesroom.

WORTHINGTON PUMP & MACH. CORP., 115 Broadway, New York—This company will occupy booth No. 58 and intends to feature the cylinder, piston and piston rod, and spray valve of their new double-acting two-cycle diesel oil engine. This particular engine has been built for the United States shipping board and has been in operation on a thirty-day non-stop run. It has also had a number of ten-day and longer runs. So far, the engine has withstood several million revolutions under full load without distress or damage. The cylinder, piston and piston rod show practically no wear. The double-acting diesel engine it is expected will show economy in engine weight and in cost per horsepower. Of the fourteen diesel engines ordered by the shipping board last December, five will be double-acting. M. L. Katzenstein, manager of the marine department will be in charge of the exhibit for the company. He will be assisted by I. W. Jackman, J. J. Morch, K. Barnard and R. C. Mathewson.

THERE IS NO QUESTION ABOUT CENTRIFUGAL LEADERSHIP



What greater tribute to the superiority of his product can a manufacturer ask than its unqualified selection by the greatest group of commercial shipowners in the world? Sharples Super Centrifuges have been installed on the following motorships as the most satisfactory means of securing complete purification of Diesel engine lubricating oils and Diesel fuel:

	Tons		Tons		Tons
Asturias.....	22,000	Tanker (Anglo-Saxon).....	10,000	Marinula.....	7,513
Alcantara.....	22,000	Tanker (Anglo-Saxon).....	10,000	Durenda.....	7,241
Carnarvon Castle.....	20,000	Tanker (Anglo-Saxon).....	10,000	Montferland.....	6,790
Aorangi.....	18,500	Tanker (Anglo-Saxon).....	10,000	Bintang.....	6,548
Indrapoera.....	15,000	Tanker (Anglo-Saxon).....	10,000	Ermland.....	6,521
Sibajak.....	15,000	Tanker (Anglo-Saxon).....	10,000	Itaguassu.....	6,000
Monte Sarmiento.....	14,000	Tanker (Anglo-Saxon).....	10,000	Sycamore.....	6,000
Monte Olivia.....	14,000	Tanker (Anglo-Saxon).....	10,000	Brazilian Prince.....	6,000
Athelchief.....	12,500	Tanker (Anglo-Saxon).....	10,000	Yngaren.....	5,247
Tanker (Molasses Co.).....	12,500	Tanker (Anglo-Saxon).....	10,000	Eknaren.....	5,243
Tanker (Molasses Co.).....	12,500	Tanker (Anglo-Saxon).....	10,000	Pacific Commerce.....	5,089
Tanker S. 479.....	12,000	Kawasaki Dockyard Co.....	9,700	Wieringen.....	5,000
Limerick.....	12,000	Swanley.....	9,200	Malabar.....	4,600
Port Hobart.....	10,800	Engines 598 (Caledon).....	8,500	Marie Horn.....	4,600
Port Dunedin.....	10,800	Op Ten Noort.....	8,050	Freida Horn.....	4,300
Pacific Shipper.....	10,000	Van Heutesz.....	8,050	Waldraut Horn.....	4,250
Pacific Trader.....	10,000	Engines 595 (Scott's).....	8,050	Minna Horn.....	4,250
British Chemist.....	10,000	Enton.....	8,000	La Perla.....	3,830
Lumen.....	10,000	Westmoor.....	8,000	City of Stockholm.....	
Asiatic Prince.....	10,000	Vinemoor.....	8,000	Rooseboom.....	
Chinese Prince.....	10,000	Sylvafield.....	8,000	Merak.....	
Malayan Prince.....	10,000	Silveray.....	8,000	Van Goens.....	
Japanese Prince.....	10,000	Silvercedar.....	8,000	Speelaman.....	
Javanese Prince.....	10,000	Silverfir.....	8,000	Carpentier.....	
Doxford Ship Bldg.....	10,000	Silverelm.....	8,000	Van Dieman.....	
Tanker (Anglo-Saxon).....	10,000	Iossifoglu.....	8,000		

Visit the Sharples Exhibition, at Booth 46 at the American Marine Exposition, New York, Nov. 9-14. Sharples engineers will give you full particulars on the Presurtite Super Centrifuge for fuel oils, and the Standard Sharples Machine for lubricating oils. A line addressed to any Sharples Office will bring you a fund of valuable centrifugal facts.

THE SHARPLES SPECIALTY COMPANY, 23-38 WESTMORELAND STREET, PHILADELPHIA. Boston, New York, Pittsburgh, Chicago, Detroit, Tulsa, New Orleans, San Francisco, Los Angeles, Seattle. Super Centrifugal Engineers, Ltd., Aldwych House, London, W. C. 2, England. Ste. Ame des Appareils Centrifuge, 8 Rue du Helder, Paris, France. Tatsumi Commercial Corporation, Marine Insurance Building, Tokio, Japan.

SHARPLES

A GREAT FORCE

Please mention MARINE REVIEW when writing to Advertisers

Railroad Converts Two Tug Boats

The New York Central railroad has under way the conversion of two tug boats to diesel geared drive. In one of these boats an Ingersoll-Rand engine will be installed and in the other a Winton engine. Each engine will be of 250 horse power so that a detailed comparative study may be made. For each tug boat the gears will be made by the Falk Corp. and the clutches by the William Cramp Ship & Engine Building Co., Philadelphia.

Build Marine Railways

Crandall Engineering Co., Boston, marine railway and dry dock engineers, have a number of jobs under way for marine railways. Two yacht railways, one a 200 ton and the other a 50 ton, are now under construction at the New York yard of the F. D. Lawley, Inc. at Quincy, Mass.

A marine railway dry dock is under construction at the Havana Marine Railways, Inc. The cradle will measure 260 feet over the keel blocks.

A 50-ton electric yacht marine railway equipped with steel cradle and concrete tracks has just been com-

pleted for the Great Lakes Boat Building Corp. The engineering activities of the Crandall Engineering Co. cover all points of the world and this company, it is understood, is now engaged an important waterfront development in Peru.

Fleet Head Receives Instructions

In a letter from T. V. O'Connor, chairman of the United States shipping board, to Elmer E. Crowley, president of the Emergency Fleet Corp., dated October 8, the limitations of the authority of the fleet corporation are outlined. Chairman O'Connor said: "Referring to resolution of the United States shipping board, October 1, 1925, as stated therein, the power and authority vested in the shipping board by the merchant marine act of 1920 shall until otherwise ordered by the board be exercised by it through the United States Shipping Board Emergency Fleet Corp. to the extent and in the manner enumerated in said resolution, it being the intention thereunder to adhere to the policy of investing ample powers in a single executive for the operation of the government fleet."

Harry A. Smith Becomes Lombard Representative

W. Merton Rice, who for the past two years has represented the Lombard Governor Co., manufacturers of Lombard oil engines, has resigned to accept a position as managing director with Henry Gielow Inc. Mr. Rice was closely associated with Mr. Gielow for over 13 years so his was a logical choice for this position when Mr. Gielow died. Harry A. Smith, formerly with the New York office of Hooven, Owens, Rentschler Co., will have charge of the New York sales for Lombard Oil engines in the future. Mr. Smith will retain the office at 39 Cortlandt street.

May Operate Ships

Reports have been going around that several important automobile companies are looking to purchase a fleet of 15 to 20 government ships, for operation as a single fleet in the interests of several companies. The companies mentioned are the Hudson, Dodge, Chrysler and Hupmobile. The reports state that it is the intention to operate these ships to foreign ports from Detroit.

Channel Steel Hulls

Channel steel construction offers advantages that every ship operator should be familiar with. Adding strength and saving weight are but two of many superior features.

Channel steel construction costs less and is stronger. Channel steel constructed ships generally carry more tonnage on same water draft. Repairs are cheaper and quicker. Possibility of leakage is lessened. Rivets do not penetrate through outer shell, or the sides and bottoms of the cargo holds or hoppers. Clam shells used in unloading cannot start rivets. Vessels may be fabricated and shipped knocked down to remote places. They can be assembled quickly by unskilled labor, as channel flanges can be either bolted or riveted together. We will gladly acquaint you with detailed facts.

Upper view—pocket dump scow—125 cu. yds. Capacity.



Lower view—500-ton hopper sand barge.

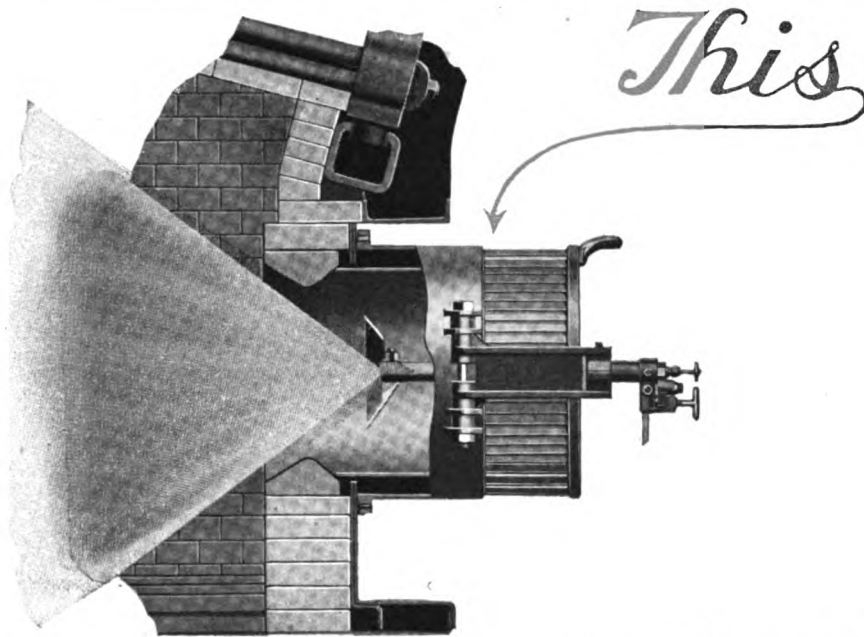
Barge Suspended on end blocks

FIRST STEEL VESSELS CONSTRUCTED OF CHANNELS

Channel Steel Barge Co., Rome, N. Y.

W. G. BARTENFELD, GREAT LAKES REPRESENTATIVE, LORAIN, OHIO

Please mention MARINE REVIEW when writing to Advertisers



is the COEN COMPANY
SWING DESIGN NATURAL
DRAFT FIRING FRONT for
installation under Water Tube
Boilers.

This type of Oil Burning Front
is giving operators more than 80%
BOILER EFFICIENCY over a
wide load range, without chang-
ing burner tips.

Write us for Bulletin "M"

Why not ask our engineers if you
can burn oil economically. No
obligation, simply write us.

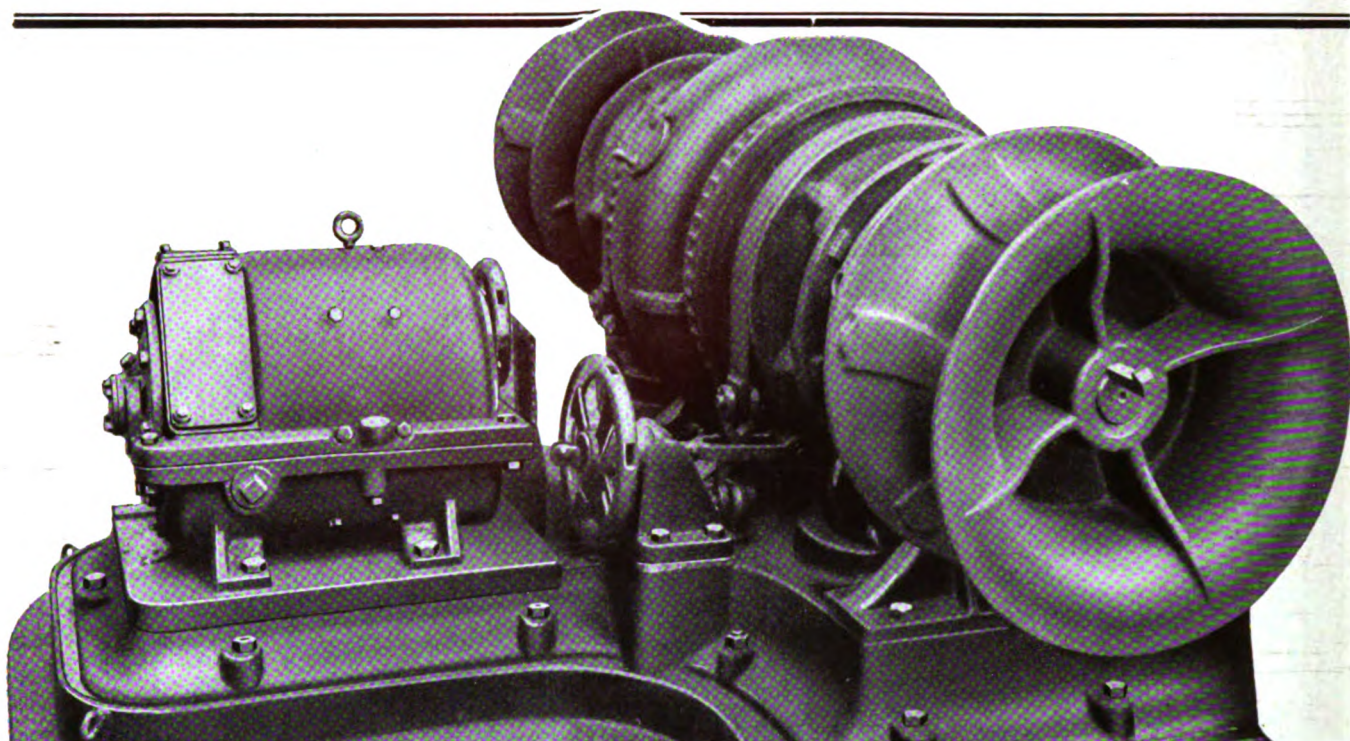
Coen Company, Inc.

New York—50 Church St.

San Francisco—112 Market St.

Please mention MARINE REVIEW when writing to Advertisers

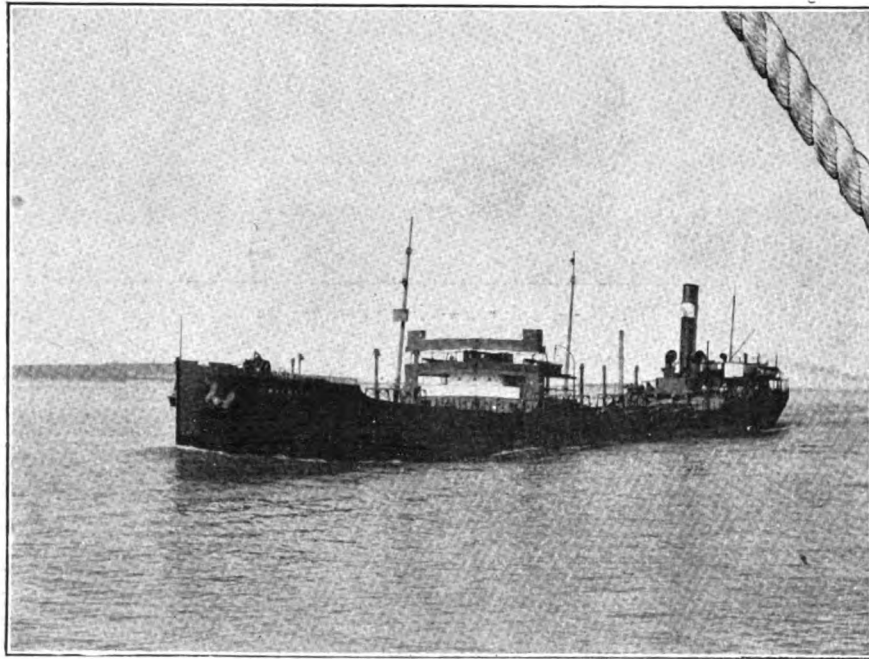
DIEHL



ALL the motors and generators except one on the eight Standard Oil Company's Diesel Barges were supplied by Diehl.

DIEHL MANUFACTURING COMPANY
ELIZABETH, N. J., U. S. A.

Please mention MARINE REVIEW when writing to Advertisers



It Pays To Use Reliable Equipment

The workers of the sea which have the most profitable voyages put particular stress on their equipment,—both for use under way and for loading and unloading in port.

Columbian ^{Tape-Marked} Pure Manila Rope

in many cases forms an important part of this equipment. The manufacturers have so much confidence in the high quality of Columbian that throughout its entire length they place the red, white and blue twisted tape bearing their signature and the words

GUARANTEED ROPE



Columbian Rope Company

332-90 Genesee Street

Auburn, "The Cordage City" N. Y.

Branches: New York Chicago Boston New Orleans



Please mention MARINE REVIEW when writing to Advertisers



COAMO—Passenger—Single Screw—Steam

Another Achievement in Shipbuilding is coming from "Newport News"

DURING 1925 the single screw, ocean passenger ship "COAMO" will be completed by Newport News Shipbuilding and Drydock Co. When finished she will be for her size one of the finest ships afloat.

The COAMO is a notable addition to a long list of fine ships built in our yards. All of them have benefited from the rare shipbuilding skill and experience that makes satisfaction certain when "Newport News" handles the job.

Newport News Shipbuilding and Drydock Co., is equipped to handle the largest assignment in ship construction or repairs.

Facilities for Construction and Repairs

Our modern plant facilities, competent staff of Marine Engineers and Shipbuilders enable us to follow accurately specifications that step out far in advance of ordinary design in any feature of ship construction.

If you desire fine ships, or are in need of quick, dependable repair service it will pay you to investigate our service. Our engineering staff will be glad to consult with you without cost or obligation.

Distinctive Ships We Have Built

S.S. Coamo
S.S. Cherokee
S.S. Seminole
S.S. Mohawk
S.S. Chatham
S.S. Dorchester
S.S. Fairfax
S.S. Robert E. Lee
S.S. George Washington
S.S. City of Chattanooga
S.S. City of Birmingham
Tanker J. H. Senior
Yacht Ohio
Yacht Dolphin
Yacht Nenemoosha
Yacht Pawnee

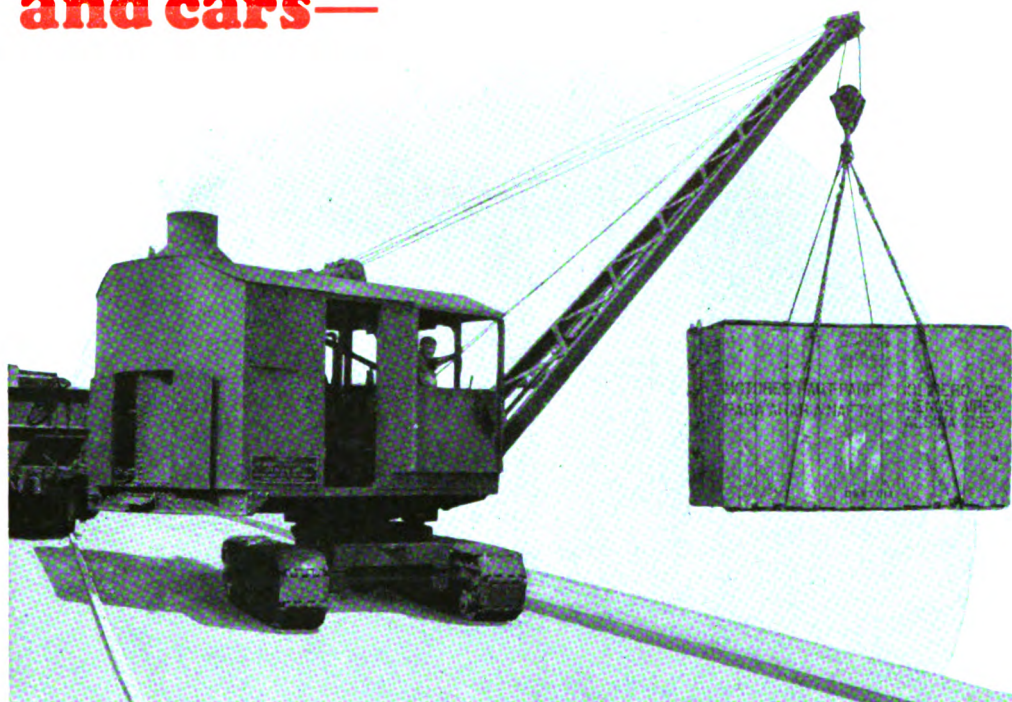
Newport News Shipbuilding and Dry Dock Co.

233 Broadway, New York

Newport News, Va.

Please mention MARINE REVIEW when writing to Advertisers

**For Rapid Freight Handling
on docks or to and from ships
and cars—**



McMyler-Interstate 10-Ton Crane

You will find this McMyler-Interstate No. 2 10-ton crawler crane of exceptional merit both from the standpoint of rapid handling of miscellaneous freight and economical operation, especially where limited space requires the machine to work in close quarters.

The crane has a 35 or 40-ft. boom and two power drums. The available line pull is 10,000 lbs. The lower frame and turntable are heavy box section steel castings. The boom hoist is worm driven and self locking.

The crane may be mounted on crawler, tractor or railroad type car-body. Steam, gas or electric power can be furnished for these machines.

**Floating, Dry Dock, Ship Building and Locomotive Cranes, Clam-shell Buckets,
Car Dumpers, Derricks**

THE MCMYLER-INTERSTATE CO.

CLEVELAND, OHIO, U. S. A.

New York

Detroit

Pittsburgh

Chicago

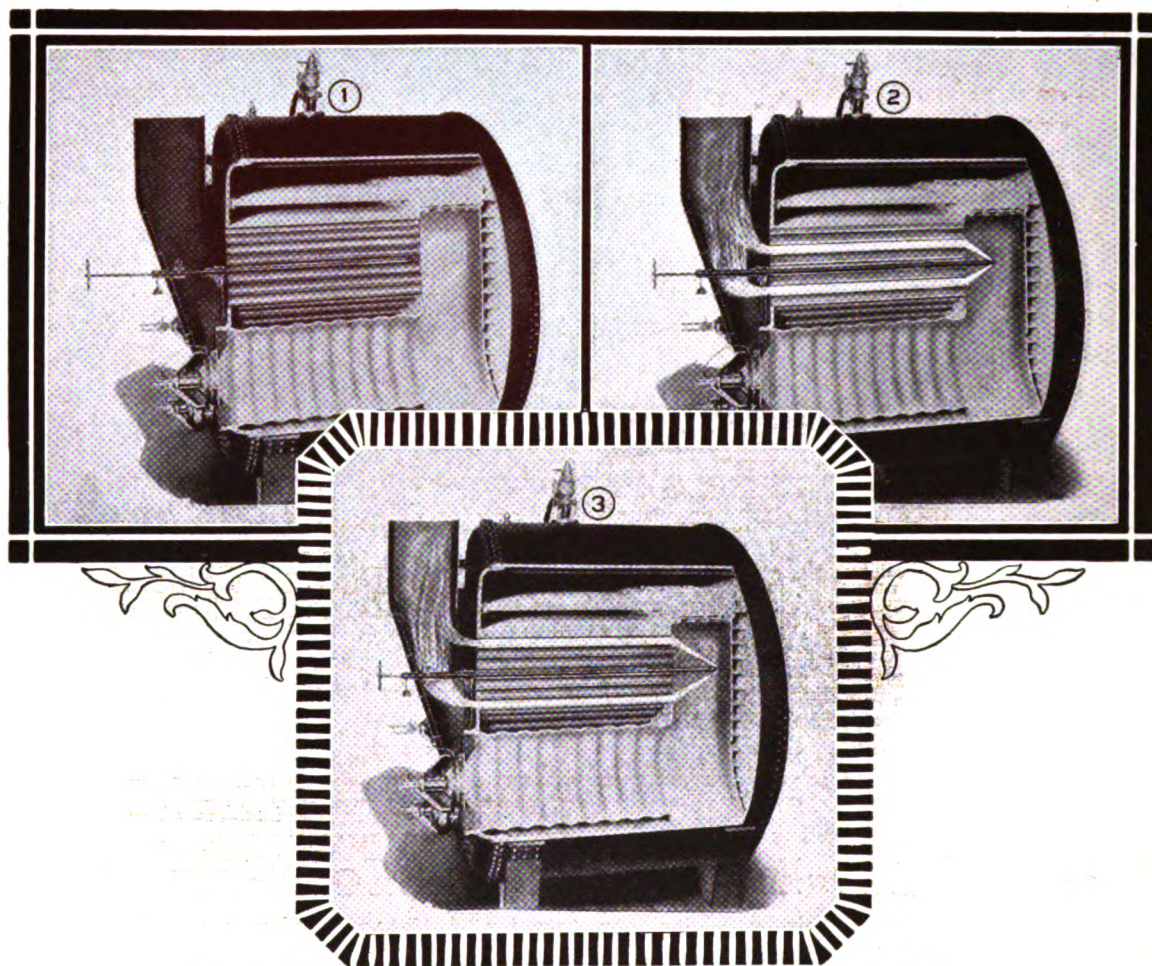
Philadelphia

Los Angeles

Buffalo

Please mention MARINE REVIEW when writing to Advertisers

Diamond Rear End Front Operated Soot Blowers blow soot with the draft up the stack—



See Our Exhibit—Booth 13—Marine Exposition

The vital principle of cleaning Scotch Boiler tubes by blowing soot with the draft up the stack, is the basis of the Diamond Model BBM Soot Blower, illustrated above. This soot blower may be installed in boiler tubes of 2" diameter and larger. The blower is housed in the boiler tube proper. The one nearest the center of the tube bank being selected where possible. Operation is by means of a removable handle, which passes through the uptake doors and engages a simple mechanism, which permits the blower to be advanced through its enclosing tube back into the combustion chamber, step by step, at the same time being rotated about its horizontal axis. Through the

combination of these two motions, the steam jets describe constantly-widening cones which clear the tube surfaces with great effectiveness. After blowing, the blower is drawn back into its protecting tube by a straight pull and the operating handle is detached.

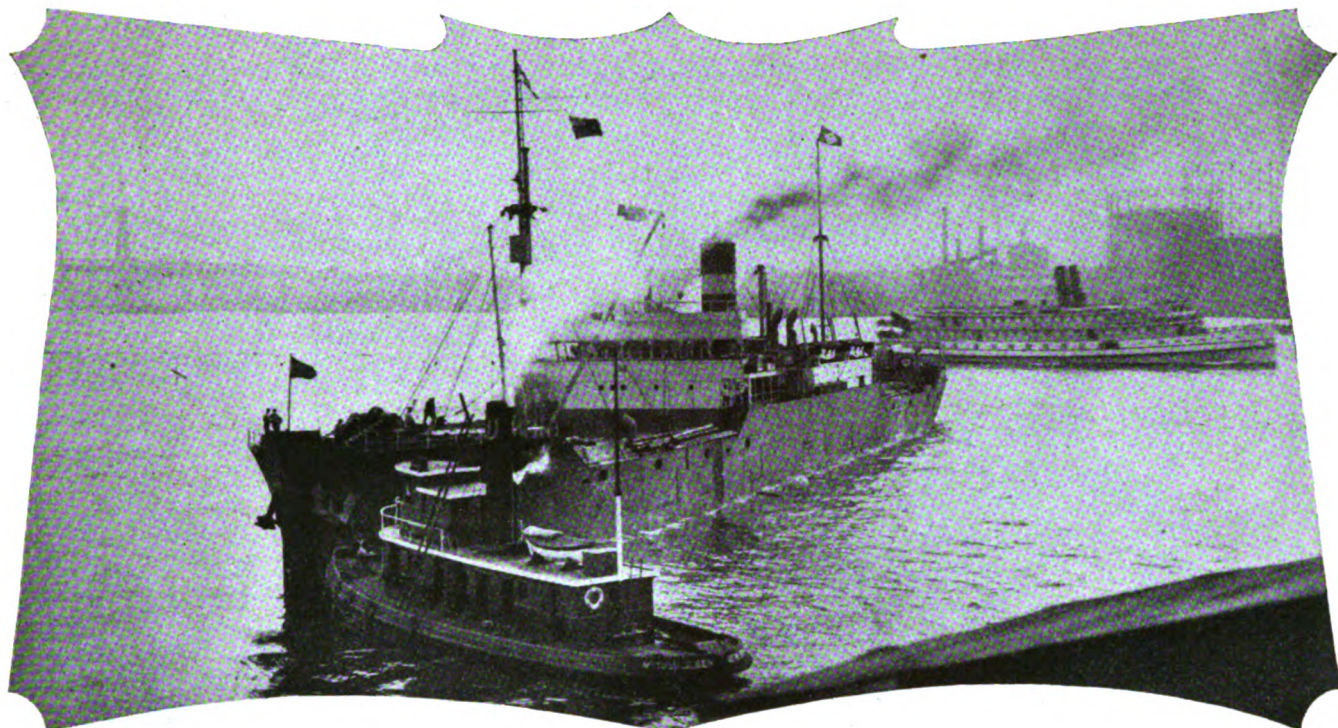
The construction of the Model BBM Blower is very simple and sturdy. There are no threaded working parts to be exposed to the action of the steam or furnace gases. The installation is admirably simple, as it is necessary to cut holes only in the uptake doors through which to pass the operating handle, and to lead the steam supply pipes into the front connections.

Write for Bulletin 143.

New York Office: 90 West Street

DIAMOND POWER SPECIALTY CORPORATION
DETROIT, MICHIGAN

Please mention MARINE REVIEW when writing to Advertisers



Coeur d'Alene outward bound from her New York pier at Kent street Brooklyn, for Mediterranean and Black Sea ports—First time under the direct operation and ownership of the Export Steamship Corp.—A full cargo was taken

Give Private Operation A Trial

Private Owners Buy 18 Government Ships and Operate Them
In the Foreign Trade — Shippers Should Give Their Support

NEARLY two years ago, struck by the dependable and efficient service rendered over a period of four years by a large proportion of the 110 cargo ships constructed at Hog Island, a special study was made of the performance of one of these ships and the results were published in *MARINE REVIEW* for December, 1923. The choice of the S. S. HOG ISLAND was made for this study of a four-year performance record, it was stated at the time, because her record of continuous dependable service fairly represented her type, and furthermore because this vessel had been operated by the same company, the Export Steamship Corp., New York, continuously since her trial trip, Oct. 10, 1919, and that therefore the responsibility for her record and condition rested with this company alone. The general findings were that this American emergency built merchantman then over four years old had had regular steady employment, having completed 13 voyages and started on her fourteenth, and

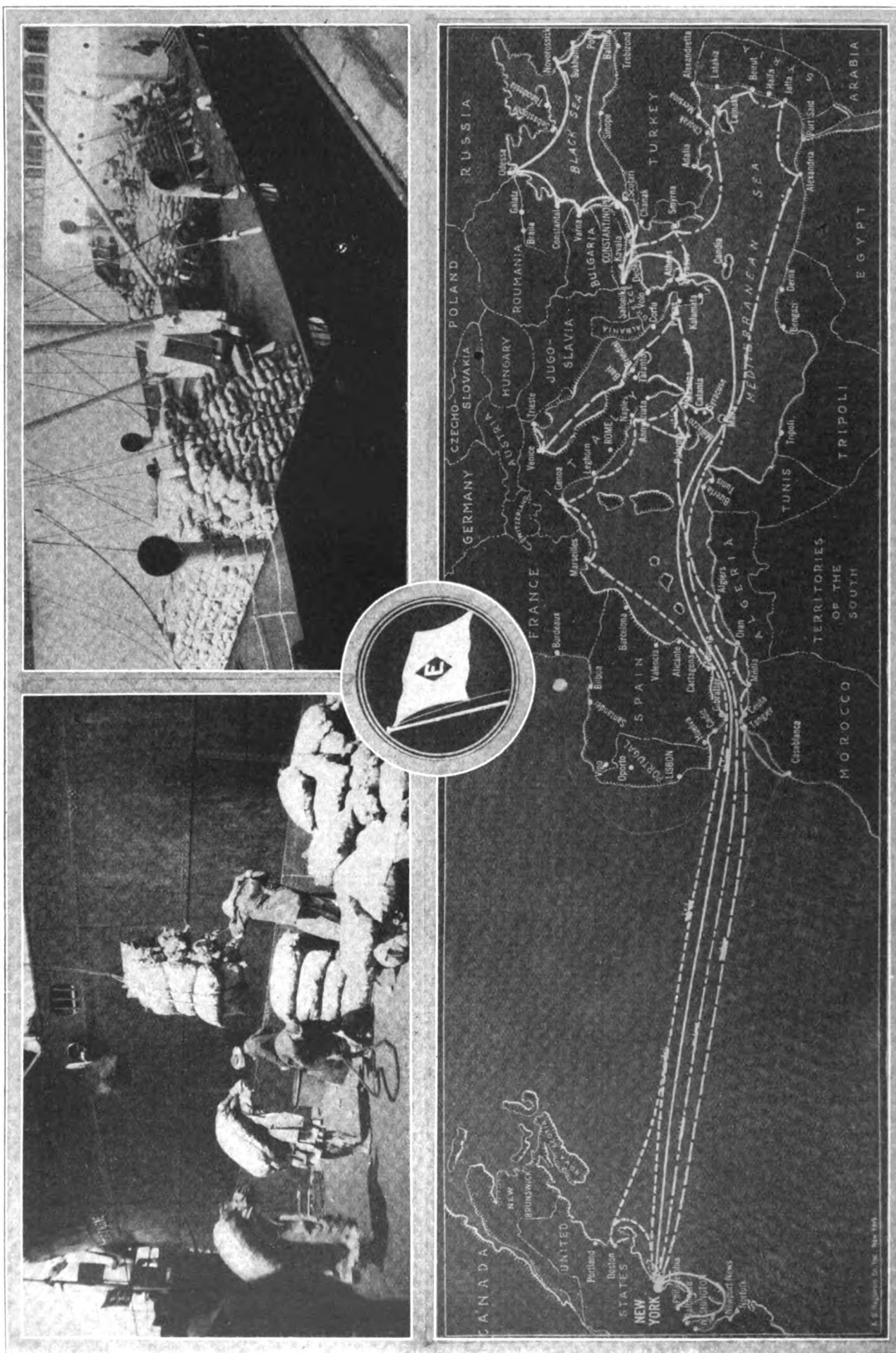
had had an honorable, efficient career comparable with that of any merchant ship under any flag.

Two years have elapsed since this was written. The S. S. HOG ISLAND is now six years old and continues to give regular and dependable service. The efficiency of the Export Steamship

Corp., as indicated in the performance of this individual ship, was clearly recognized when, in the interests of economy, a consolidation of the three shipping board services from United States to Mediterranean and Black Sea ports became necessary, this company was chosen on its merits as best equipped to operate the much enlarged service for the shipping board. In August of this year the Export Steamship Corp. purchased the entire fleet of 18 vessels which it was operating, at \$7.50 per ton. These vessels are all freighters of the Hog Island type, 401 feet in length overall, 54 feet in beam, 32 feet in depth, of about 5000 gross tons, 3000 net tons and a deadweight capacity of about 7800 tons. The



HENRY HERBERMANN
President, Export Steamship Corp.



SERVICES MAINTAINED BY THE EXPORT STEAMSHIP CORP. BETWEEN UNITED STATES AND MEDITERRANEAN AND BLACK SEA PORTS. (UPPER LEFT)—S. S. COEUR D'ALENE LOADING ONIONS AT ALEXANDRIA. (UPPER RIGHT)—S. S. BLAIR AT ALEXANDRIA BOUND FOR BOSTON AND NEW YORK. NOTE DECK CARGO

main machinery is of turbine type with reduction gears. The boilers are of the water tube type and burn oil, and the speed is about 11 knots loaded. These ships, with two already owned, gives the Export Steamship Corp. a fleet of 20 fine cargo vessels in every respect in so far as ability to render safe and expeditious service is concerned superior to many and the equal to any similar fleet operating under any flag.

The names of 17 ships of the fleet are: CITY OF EUREKA, WINONA, OSSA, SAUCON, SAUGUS, SINSINAWA, CORSON, HOG ISLAND, LUXPALILE, NOBLES, CITY OF ST. JOSEPH, CLONTARF, COEUR D'ALENE, BLAIR, BLUE TRIANGLE, CARENCO and LIBERTY LAND.

Under the terms of the contract covering the purchase, the company agreed to continue the regular scheduled services under the American flag for a period of at least five years. For the present, regular sailings are provided from New York, Boston, Philadelphia and Baltimore to numerous Mediterranean and Black Sea ports. Fortnightly services are maintained to the west coast of Italy and Marseilles, and to Malta, Alexandria, Syria, Palestine Coast and Greece. There is a monthly direct service to Greece and thence to Constantinople and Black Sea ports, and also a monthly service to North African ports.

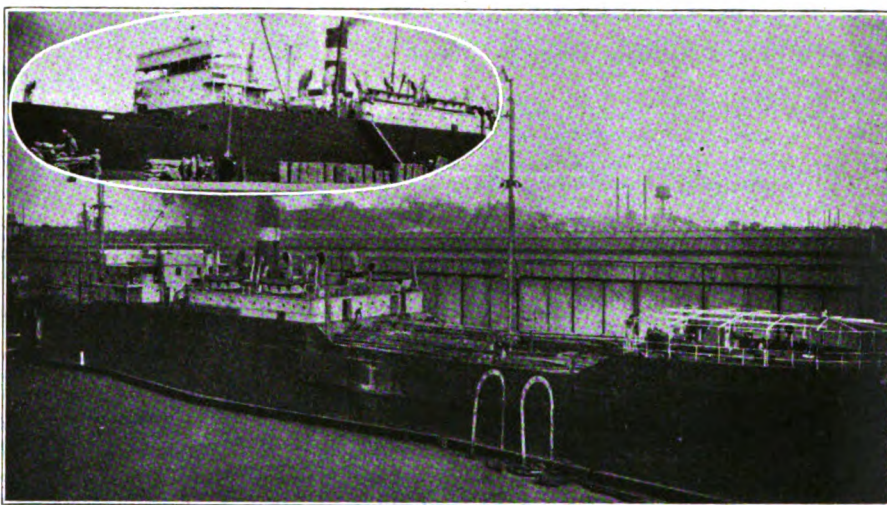
At the end of five years from now the Export Steamship Corp. will have been engaged in this trade steadily for 11 years, which surely seems a sufficient length of time in which to establish definitely that American flag ships are needed and that continued patronage and support by shippers make it a profitable undertaking for the owners. It is an experiment if you like in American flag operation which involves consequences of the greatest significance to the future of our merchant marine in the foreign trade.

If success of this line, and others recently sold by the shipping board, under wise and careful private management is not possible, it is useless for Americans to aspire to an appropriate share of foreign trade as the capital cost in these cases has been reduced greatly below that of foreign owners. Protection against competition intended to drive these new American owners out of the trades that they are now pledged to maintain has been promised by the United States shipping board through Chairman O'Connor in these words: "If foreign owners start a rate war against American buyers

of shipping lines recently sold by the shipping board with the idea of putting the American ships out of business, the shipping board will immediately take these lines back and operate them until congress meets and considers the general question of protecting American ships under private operation."

The Export Steamship Corp. is one of the few steamship companies, organized during or shortly after the war, when shipping was so profitable and seemed so easy, who are alive today to tell the story. Even the names of most of them have by now been forgotten. That the good reputation this company holds today is founded on actual performance is vouched for by the respon-

ing this experience in securing the full cooperation and consequently an increasing amount of freight from the railroads. From outward appearance it would appear to the observer as if both the operating and traffic departments of the company knew their business and closely attended to it. Real orderly thinking has been brought to bear in clearly formulating and stating the duties of various officers and employes of the company. It helps for any one to know definitely what is expected of him and there can be no uncertainty on this score. The repair and maintenance of the ships has been given methodical attention under the able and conscientious supervision of the shore staff. Throughout the organ-



COEUR D'ALENE AT KENT STREET PIER BROOKLYN FULLY LOADED READY TO BEGIN HER FIRST VOYAGE UNDER THE OWNERSHIP OF THE EXPORT STEAMSHIP CORP.—THE INSET SHOWS THE COEUR D'ALENE DURING A PREVIOUS VOYAGE, ON COTTON BERTH, ALEXANDRIA

sible officials of the shipping board and Emergency Fleet Corp. The ability and integrity of the personnel caused these officials, when the three services to the Mediterranean and Black Sea were consolidated into one, to give the management to the Export Steamship Corp. These officials thus vouched for the high standing and efficiency of this company, in expressing in such an emphatic way their belief that it was best equipped to successfully meet the responsibilities of the larger service. This confidence was again shown in approving the sale of the ships.

Without question, Henry Herbermann, president of the company, is responsible for its good standing. He is not old-fashioned in the steamship business and has brought to it a keen, open mind, resourcefulness and tremendous energy. His experience is especially broad in the terminal and lighterage problems of the railroads and he is undoubtedly apply-

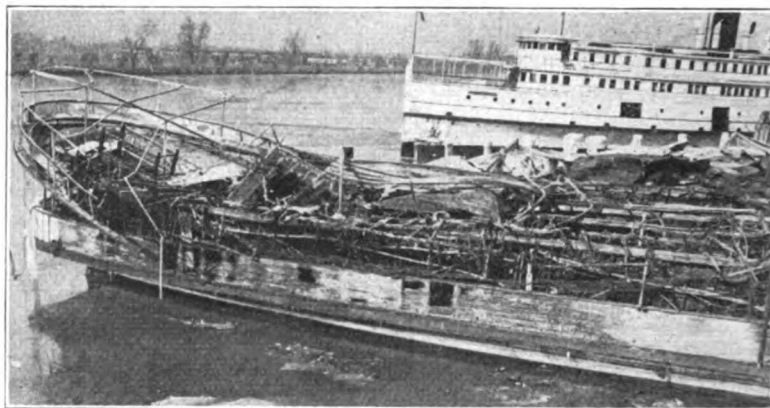
ization to the eye of the casual observer there seems to be orderliness combined with effective action all operating in an air of real democracy with the rule that merit and efficient service are the only qualifications for promotion.

The Export Steamship Corp.'s responsibility is great, not alone or principally as regards its own success, but because it is representing the entire American merchant marine in a determined effort to see whether there is really any practical way of operating American ships in the foreign trade. If the officers and employes of this company fail to do their utmost to cut down every cent of waste and fail to do their best and as a result the attempt fails, it will be a serious blow to all aspirations for a foreign going American merchant marine. In other words, they have the opportunity now as well as the responsibility of showing the country that it can be done.

What Are You Doing to Prevent *Fire* On Your Piers?

Cost of Tie-up Due to Pier Fires Often Exceeds Direct Loss—Provide Access for Fire Fighting Apparatus—Keep Piers Clear of Debris Above and Below Deck—Hose and Extinguishers Should be Kept Always Ready and in Good Condition.

BY H. W. ORDEMAN
Chief Engineer, United Terminals Inc.



A pier fire at Washington, D. C.—The gutted remains of the steamer Midland after a fire in which the wharf and steamer were destroyed.—Total loss estimated at \$600,000

A SCORE of years ago the clang of the town hall bell or the blast of the water works whistle signaled the suspension of business and all hands raced to the fire. Today the red shirt of "Volunteer Hose Number One" is packed away in the attic or has spent its last days as a dust rag. We glance out of the window as the motorized fire apparatus passes by and then turn back to our business. Fires are accepted as a matter of course although the fire loss for the United States in 1924 exceeded half a billion dollars, more than the cost of the Panama canal. Being blase has placed five dollars a year on the debit side of the ledger for every man, woman, and child in the country. But we continue to be blase.

Provide Access For Fire Fighting

Business dependent on the use of water front structures, particularly piers, is seriously handicapped by fire. In the smaller ports where there is but one pier capable of handling ships of deep draft it often means the closing of the port until a new pier is constructed and no insurance can adequately recompense the owner or operator. Competition is too keen in all branches of maritime trade for the pier operator to ignore the possibilities of fire and not take steps for its prevention. Treat fire as you would smallpox and vaccinate against it by using prevention as a vaccine; and

the doctor may not be needed.

Wooden substructures present the greatest pier risk owing to their inaccessibility at high tide, and if topped with a concrete deck there is delay in cutting an opening for hose lines. The majority of pier decks are at an elevation of five feet above mean high water, this elevation being practically governed by shore approaches and for convenience in handling lighters and other harbor equipment. Deducting for caps, stringers, and decking there is only two feet of free space under the pier at high water which is insufficient to allow a raft or boat under the pier with fire-fighting equipment. Fire breaks extending from low water to top of decking aid in localizing a fire but the older piers are without them.

At a recent substructure fire pneumatic drills were used to open up a portion of the concrete decking to allow the formation of a water curtain by the firemen. Twenty-four hours elapsed before the fire was finally extinguished and the delay in opening up the deck gave the flames five hundred feet of headway. If a pier is without fire breaks, rows of twelve-inch manholes spaced ten feet apart thwartwise of the pier would afford a means of using revolving nozzles of the Bresnan type for forming a water curtain. Scuppers and manholes will be effective if they are properly marked and not blocked up with cargo. The painting of a red

stripe on the inside walls of the pier just above fire breaks or manhole lines helps the firemen locate points at which the fire can be strategically fought.

Keep Piers Clean of Debris

Substructure fires are generally caused by float-inflammable debris lodging against piling or bracing and igniting from carelessly thrown matches or butts. Since the advent of oil fuel, wooden substructures are coated with a film of oil that affords a distributing medium for a small fire. Periodic cleaning away of lodged material and eliminating pockets or projections where floating debris may collect is essential.

Modern superstructures of steel with metal walls are ideal, but there still exists a large number of framed piers, metal sheathed over wood that requires the maximum in prevention and equipment. Rough faced timbers allow numerous places for the collection of dust composed of small particles from all the cargo ever handled on the pier. In situ the dust will not burn, but broken up by fire draft it acts as a fuse and carries the fire to other portions of the pier. There is no doubt that many explosions on burning piers are attributable to dust rather than cargo. Whitewashing of the rough surfaces and proper ventilation are the best means of restricting the dust menace; a broom or brush should be used if ventilation

does not clean out the corners neatly.

In some localities sprinkler systems are required by law but the maintenance and testing of this type of specialized apparatus is too often delegated to employees who are unable to give it proper care and still perform other assigned duties. The value of sprinklers is evidenced by the reduction of insurance premium for installation and is predicated on the system being in condition to function at all times. Rigid rules for keeping these systems in good order should be mandatory.

Practically all piers have standpipe lines generally placed along the walls so that a fire aisle is required. Placing them along the driveway is more effective as double the number of lines can be concentrated on a fire and the clogging of fire aisles by cargo is

pier watching force should be instructed how to use them. Excitedly hunting for the proper valve gives the fire a chance to get out of control of the local force while the turning of the wrong valve may result in a cargo damage greater than that by fire. A handy piece of equipment is a shut off nozzle but the hose must be able to stand the feed line pressure in order to use it properly. A few chemical extinguishers through the pier will aid in extinguishing incipient blazes, but it is most important to see that the small outlets are clear and free from corrosion.

Keep Pier and Roof In Order

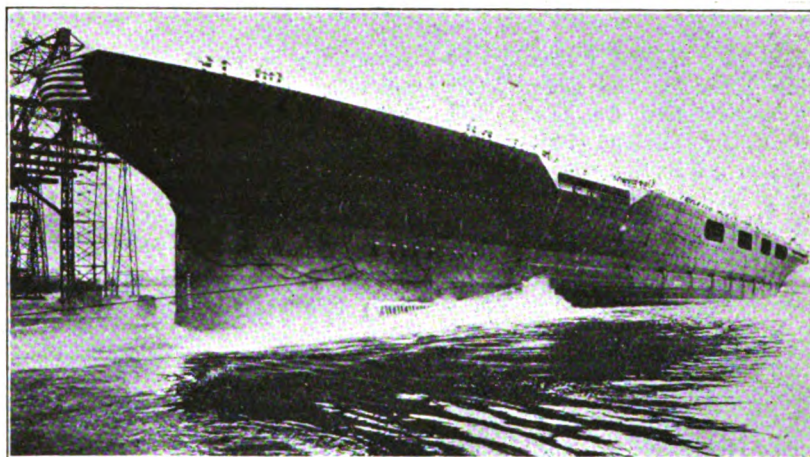
Damaged cargo should not be allowed to remain on a pier. Broken dunnage, packing, empty containers, and cargo material present a far less

exposes rough edges to fire hazard.

Protection does not end with the purchase and installation of equipment. You may satisfy the demands of insurance companies for fire fighting apparatus and enjoy reductions in premiums, but prevention and proper care of equipment is up to the operator. Prevention calls for no cash expenditure, only the exercise of common sense and the inherent law of self preservation. The element of self preservation has been dulled by the absorption of a portion of the individual's duties by fire departments and paid patrols. They can aid in prevention but cannot be held responsible when an owner or lessee refuses to carry out their recommendations. Active interest in prevention is necessary if fire losses are to be lowered. Decreased losses meaning lower pre-

U.S.S. Lexington, Airplane Carrier, Launched

THIS illustration shows the mammoth airplane carrier Lexington just after she was launched, Oct. 3, at the Fore River yard of the Bethlehem Shipbuilding Corp., Quincy, Mass. The ship is 888 feet long, 105 feet in beam, electrically driven and will have a speed of 33 knots. Her displacement is 33,000 tons. The motive power is derived from eight 22,500 horsepower motors, connected in pairs to each of the four propeller shafts. Electricity is generated by four 35,200 kilowatt turbine generators. The entire electrical plant was constructed by the General Electric Co.



thus eliminated. These lines are as efficient as the hose with which they are equipped. Once installed, the hose is too easily forgotten and is allowed to lay or hang in kinks. It dries out at the kink and becomes brittle, the fabric breaking, so that when put in use pin holes and "blows" develop. Less space is needed to reel or roll hose than to fold or kink it and if taken down and tested at least twice a year it will make a dependable piece of equipment. Hose equal in pressure test to that of the city department should be installed as a fire may be so situated as to prevent firemen from laying outside hose on the pier in which case the pressure on the standpipe line is increased by outside pumping and the pier hose must be able to stand up under this duty. The location of valves and bleeders on standpipe lines should be marked with a distinguishing color and the

fire risk when neatly piled than when scattered. The danger from dirt on a pier floor is as great as from dust on the framing for it forms a pathway for small fires to reach inflammable material.

The roof offers a fair field for fire, in fact as much as the substructure. The average pier roof is two acres in area and even on the modern structures is generally composed of tar and paper laid over wood sheathing. Two acres of what may be classed as a fire risk. With coal burning vessels of all descriptions working around the piers there is always the possibility of defective spark screens. Chaff, from elevators used in loading grain on ships, covers a roof very quickly and will ignite from a spark. See that the roof is kept free from chaff especially the scuppers. Do not allow any kind of debris to collect as it cuts through the roof covering and

miums with attendant decrease in operating costs should appeal to the pier operator. If one "fire prevention week" a year does not keep down the loss it would be well to extend the week to the entire year.

Recent Sales of Ships

The president of the Emergency Fleet Corp. has announced the following sales of tonnage:

CORNUCOPIA, lake-type cargo, 3180 dead weight tons, 2153 gross tons, for \$28,500 to Charles F. Webb, 1110 State street, Boston.

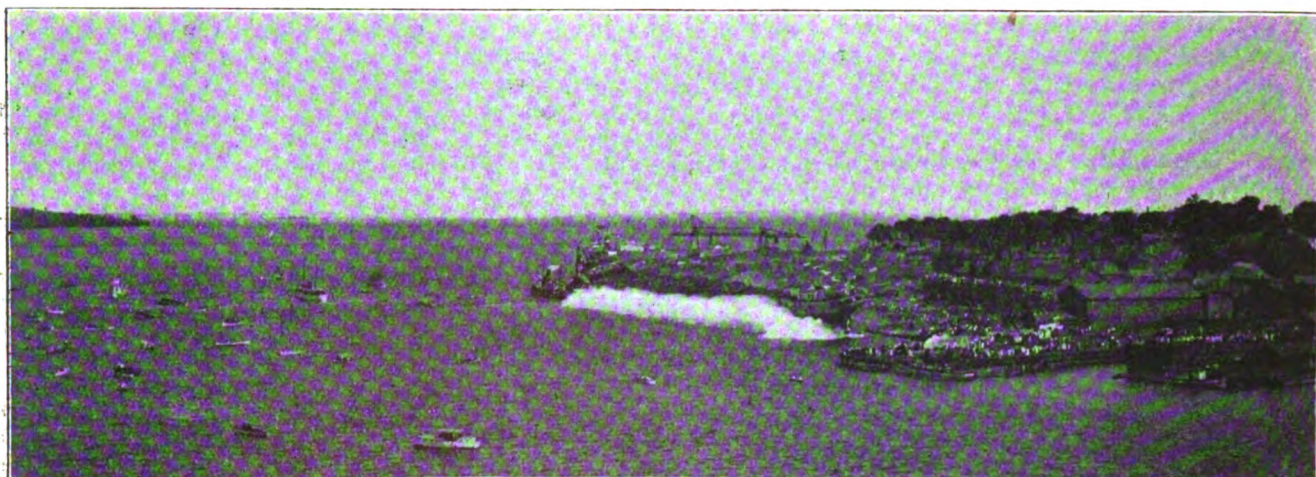
COPERAS, lake-type cargo, 3180 dead weight tons, 2153 gross tons, for \$27,000 to Aetna Portland Cement Co., Detroit.

LAKE CATHERINE, lake-type cargo, 2940 dead weight tons, 2016 gross tons, for \$31,000 to Aetna Portland Cement Co., Detroit.

HULVER, ocean type, coal burning tug, steel construction, 418 gross tons, for \$45,000 to Mobile Towing & Wrecking Co., Mobile, Ala.

WEST KEATS, steel cargo vessel, 8538 dead weight tons, 5661 gross tons, for \$202,000 to California and Eastern Steamship Co., Los Angeles.

LAKE CAPENS, lake-type cargo, 2875 dead weight tons, 2026 gross tons, for \$30,000 to John Barnett Waterman, First National Bank building, Mobile, Ala.



The Lake bulk freighter GLENEAGLES launched at the yard of the Midland Shipbuilding Co. Ltd., Midland, Ont., Aug. 26—Built for the Great Lakes Transportation Co. Ltd., Midland, Ont.

Canadians Build Big Freighter

Midland Shipbuilding Co., Ltd., Completes Bulk Freighter Gleneagles for Lake Service — Launched Late in August, Completed Early in October

THE bulk freight steamship being built for the Great Lakes Transportation Co., Ltd., Midland, Ont., by Midland Shipbuilding Co., Ltd., to the British corporation of shipping's highest class requirements, was launched at Midland, Ont., on Aug. 26, and christened GLENEAGLES, by Mrs. James Playfair, wife of the president of the Great Lakes Transportation Co., Ltd. This vessel has been completed as shown in an accompanying illustration. The general dimensions are, length over all, 596 feet length on keel, 574 feet, breadth, 60 feet, depth, 32 feet; carrying capacity, 12,200 tons.

A double bottom five feet deep runs for the entire length of the ship, divided into seven watertight compartments. The side tank, which is separate from the double bottom, is fitted for the full length cargo hold, extends five feet in from ship's side, and is divided into three watertight compartments on each side of the ship. The side tank wall is extended up to the spar deck, leaving a tunnel five feet wide above the main deck; all steam pipes, electric wires, steering gear shafting and hose lines, will be located in this space and will be easily accessible for repairs at any time when the ship is loaded.

The cargo hold is divided into four compartments by three screen bulkheads, the hold being 438 feet long by 50 feet wide. Access to cargo space will be provided by 23 hatches, spaced 18 feet centers, which spacing is said to be a new departure and to be

found only on the Great Lakes Transportation Co.'s latest ships. All hatches will be fitted with telescoping steel covers, to be operated by two 6 x 6 inches steam winches. For mooring, six 8 x 10 inches steam winches will be installed, one at the stern, four between aft house and forecastle, and one in windlass room. The steering gear will consist of a shaft controlled 9 x 9 inches engine, direct connected to rudder stock with control arms.

Forward there will be a raised fore-castle, with large deckhouse above which in turn will be surmounted the captain's quarters and pilot house. The fore-castle will have accommodation for first and second mates, two wheelmen, two watchmen, one boat-swain and one wireless operator; also officers' recreation hall, lavatories and shower baths. The deckhouse above the fore-castle will contain three passenger staterooms, observation room, private dining room, kitchenette and accommodation for steward and cook. Above this will be the captain's house, which will be arranged for bedroom, office, bathroom, spare room and inside stairway leading up to pilot house.

At the after end of the ship the lower deck house will contain the officers' dining room, with private dining room adjoining. These rooms will have no connecting door, but they will be entered from the outside or from the steward's hall, and contrary to usual practice, there will be no doors in the dining rooms opening into bedrooms. The cook's and steward's

rooms will be convenient to the galley and have bathroom adjoining. The deckhands, firemen, and coal-passers, galley pantry, stores and mess rooms will be all located in this house, each living room having its own shower bath and lavatory.

Above this accommodation will be a steel house containing quarters for the engine room staff. The chief engineer will have the entire after end of this structure, bedroom, bathroom and office, with thwartship hallway running the full width of the house. The entrance to the engine room will be from this hallway, with stairs leading down inside of engine casing. On the starboard side accommodation will be provided for the second engineer, and one spare room; on the port side will be located the third and fourth engineers and two oilers. All the cabins will be finished in oak or mahogany, with painted fibreboard panelling.

Steam will be supplied by three Scotch boilers, 15¼ feet in diameter by 11½ feet long, with a total heating surface of 9042 square feet. Each boiler will be fitted with three furnaces, 44 inches inside diameter; the total grate surface will be 198 square feet, and the ratio of heating to grate surface is 45.6. The boilers are designed for a working pressure of 190 pounds per square inch. A forced draft installation will be fitted in connection with the boilers, and there will be a 75-inches diameter fan, driven by two 7 x 5 inches vertical engines, located in the engine room. The flue

will be of the direct type, located in the smokeboxes, and operated by levers from the fire room floor.

The propelling machinery will consist of a vertical triple expansion engine, arranged with the high pressure cylinder forward, followed by the intermediate and low pressure cylinders respectively. The cylinder diameters will be 24½, 41½ and 72 inches and the pistons will have a stroke of 48 inches. The high pressure and in-

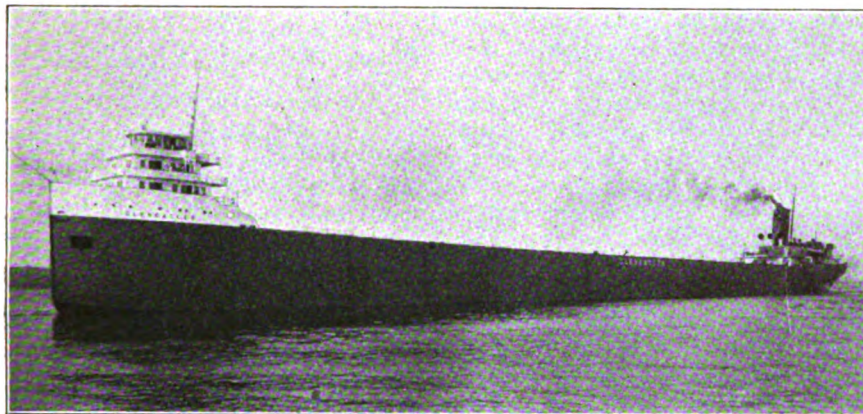
type construction, 9 feet between centers, with the bottom ends of cast steel, lined with white metal. The crank pins will be 14¾ inches diameter by 13½ inches long. The cross head pins will be 6¾ inches diameter by 7¾ inches long, double. The crossheads will be solid steel forgings, fitted with adjustable slippers lined with white metal on both ahead and astern faces. The usual type of horseshoe thrust bearing will be used,

be of the vertical simplex type, direct connected to a jet condenser, having 18 inches steam cylinder, and 40 inches pump chamber, with a common stroke of 24 inches. Two main ballast pumps of the centrifugal type 20 inches in diameter will be arranged for filling and emptying the double bottom and side tanks through double manifolds fitted between the pumps. The cargo hold can also be flooded and used as ballast in rough weather, two filling and emptying pipes being connected to it from the manifolds in the engine rooms.

Some Other Auxiliaries

There will be two auxiliary ballast pumps of the horizontal duplex type, 14 x 14 x 18 inches stroke, the suction and discharge connections being 12 inches in diameter. Two main feed pumps of the vertical simplex type, 12 x 8 x 24 inches will be fitted, and arranged independently of each other, so that either can supply the boilers while the other is being overhauled.

Other auxiliaries included in the installation will be: general service pump, 8 x 5 x 12 inches, horizontal duplex; two 2½ inch injectors; vertical spiral coil, film feed water heater, mate's pump 10 x 6 x 12 inches, horizontal duplex; 2 bilge pumps, 6 x 4 x 6 inches, horizontal duplex; fresh water pump, 4 x 2¾ x 4 inches, horizontal duplex; two ash elevators, in the boiler room, one on each side of the ship. The electrical equipment will consist of two 15 kilowatt direct connected generating sets. Refrigeration will be amply provided for in a special chamber adjacent to the pantry. The ship was placed in service early in October.



THE LAKE FREIGHTER GLENEAGLES, COMPLETED READY FOR SERVICE, OCT., 1925

intermediate cylinders will be fitted with piston valves, and the low pressure engine cylinder will be equipped with a double ported slide valve. All valves will be operated by double bar link motion, and fitted with assistant cylinders.

The engine will be arranged with three back and three front columns fitted with ahead and astern slipper guides. The bedplate will be of the girder type, and will have six main bearings 14 inches in diameter. The connecting rods will be of heavy fork

with nine collars, water cooled inside, and running in an oil bath.

The stern tube will be of heavy cast iron design, fitted with brass bush, lined with lignum vitae, in two lengths, to permit of easy withdrawal and renewal of the wood liners. The propeller shaft will be 15½ inches in diameter, and the propeller will be of the sectional type with four blades, and will be 16 feet in diameter by 18 feet pitch.

All pumps will be independent of the main engine. The air pump will

World's Shipbuilding Drops Off But New Orders Exceed Launchings

A DECLINE of more than 150,000 gross tons in world ship-construction during the past three months has brought the total tonnage building to the lowest level since the late war, according to Lloyd's Register of shipping, in a statement covering returns from all the maritime countries for the quarter ending Sept. 30. While general ship construction has been decreasing during the current year, with the exception of motor vessels, the present return shows a decline in that line also, representing about 40,000 gross tons less than in the quarter ending June 30, last.

The only increases in work in hand shown by the present returns, are

those of Italy and Holland, Great Britain and Ireland show a decrease of 84,000 gross tons, France of 19,000 tons, Denmark, 7000 tons. The construction in the shipyards of the United States declined 22,000 tons, Germany showed the greatest drop, one of slightly more than 100,000 tons.

Comparative figures of construction now as compared with June 30, are given in the following table of work contracted for, in gross tons:

	Sept. 30 1925	June 30 1925
United States	69,866	92,001
Great Britain & Ireland.....	1,009,155	1,093,587
Other Countries	1,127,884	1,184,243
World Total.....	2,206,905	2,369,831

The British tonnage figures include

81,000 gross tons of shipping on which suspension has been ordered, so that Great Britain and Ireland combined have now actually under way less than a million gross tons.

Drop in Motor Vessels Since June

The check in the motor vessel boom is due to the decrease in that class of construction in the yards of Great Britain and Ireland chiefly. The present total under way there is not only below the total of June 30 last, but of that of a year ago also. The figures for the other maritime countries combined show a slight increase. Lloyd's gives the following comparison between the last two periods, the figures being in gross tons.

	Sept. 30 1925	June 30 1925
Great Britain & Ireland.....	856,480	899,070
Other Countries	782,408	730,842
World Total	1,088,888	1,129,912

It is to be noted, however, that a year ago, Great Britain and Ireland were building 387,670 gross tons of vessels equipped with internal combustion engines, and the other countries combined, 552,299 gross tons, a world total of 939,899 tons, or nearly 150,000 tons less than at present. It is also to be noted that while at Sept. 30, 1924, motorship construction represented only 36 per cent of all shipbuilding under way, the proportion had grown to 48 per cent on June 30, last, and to 49 per cent at Sept. 30, last.

New Work Exceeds Launchings

A decrease in the tonnage of tankers building, as compared with the total at the end of the June quarter, but an increase over a year ago, is shown by the returns. Of the world total of 344,136 at the end of September, as against 372,267 tons at June 30, last, and the 290,220 of September 30, 1924, the United States figures in the last two quarters of 1925 with 9,500. Great Britain and Ireland which were constructing 133,820 gross tons of these vessels a year ago, and 165,467 tons at the end of last June are now building 135,224 tons, or slightly above the September, 1924 total. All other countries, including the United States, were building 156,400 tons a year ago, 206,000 tons at June 30 last, and 208,912 tons at the end of the September quarter.

A somewhat encouraging feature of the returns from Lloyd's is that the new work begun during the last quarter was somewhat in excess of the launchings, while in the previous quarter, the reverse was the case. The following table shows in gross tons the contrast between shipping launched and that on which new work was begun:

	Commenced	Launched
Great Britain & Ireland.....	256,926	222,932
Other Countries	229,766	236,274
World Total	486,692	459,206

The new work given the shipyards of Great Britain and Ireland, was responsible for the excess over launchings, by more than offsetting the failure of other countries to send more tonnage down the ways than they started new work on. At the end of September, 1924, world launchings for that quarter were 552,591 gross tons, in comparison with 530,833 tons of new work commenced.

In that period, Great Britain and Ireland began work on only 252,625 tons, as compared with launchings of 358,323; while the other countries launched only 278,208 tons of new work.

Figures given by Lloyd's showing the power of marine engines now building, or being installed throughout the world, reflect the slight dropping off in the construction of motor vessels. While the indicated horse power of internal combustion engines at the end of the June quarter was 808,264, for the quarter ended September 30, it was 726,845, of which 131,770 was in Germany, and 216,510 in Great Britain and Ireland. The indicated horse power of steam reciprocating engines for all countries together, shrunk from 559,970 at June 30 to 478,515 at September 30, of which latter figure the share of Great Britain and Ireland was 282,361. The shaft horse power of steam turbines in hand fell from 353,144 in the June quarter to 318,045 in the September quarter. 143,395 horse power was the proportion of Great Britain and Ireland in the September total. It is pointed out that of the total power represented by internal combustion engines, Great Britain and Ireland's proportion of that now under way is only 29 per cent, as compared with their 45 per cent of the total of steam turbine power, and 59 per cent of the steam reciprocating engines.

Shipbuilding Rank Changes Slightly

There was little change in the ranking of the various shipbuilding nations during the past quarter. Great Britain and Ireland, Germany, Italy, France and Holland, retained their positions in the order named, as in the last quarter. Sweden broke into the ranks of nations with more than 50,000 tons under way, and Japan was merged into the list of "other countries," her total at the end of the last quarter having been only 59,000 tons. This gives the comparison of the various nations during the last quarter and the previous one, as shown by the following table, the figures being in gross tons.

	Sept. 30 1925	June 30 1925
Great Britain & Ireland.....	1,009,155	1,093,587
Germany	306,626	407,366
Italy	269,802	212,798
France	150,220	169,485
Holland	127,775	100,682
Sweden	71,580	.....
Denmark	70,760	78,061
United States	69,866	92,001

The advance made during the past quarter by Italy, concurrent with the decline for Germany, now brings the Italian shipbuilders within striking

distance of second place. A year ago Italy stood fourth.

As compared with a year ago, the proportion of the world's total construction, is as follows: Great Britain and Ireland, a decline from 57 to 46 per cent; Germany, a decline from 16 to 14 per cent; Italy, an advance, from 5 to 12 per cent; France, a gain, from 5 to 7 per cent; Holland, an increase, from 3 to 6 per cent; United States, an advance from 2.5 to 3 per cent.

New Vessel Ordered at Cramp's Yard

The order for the long pending Eastern Steamship Company's new ship for its Boston-Yarmouth run has finally been placed. As anticipated the order goes to William Cramp & Sons Ship & Engine Building Co. About the same time the Cramp shipyard was awarded a contract from the American Dredging Co. for the construction of five steel dump scows.

With these contracts in hand, the Cramp yard now has approximately \$10,000,000 of marine work exclusive of extensive contracts for hydraulic machinery, oil engines, refrigerating machines, castings and industrial products booked by other departments and subsidiaries. This and the work in hand will keep the shipyard at well over 60 per cent of capacity for the next year and a half.

The contract for the Eastern Steamship Co. vessel is the second for a passenger vessel secured by Cramp this year, the first being the Malola for the Matson Navigation Co. Another contract now under way is the conversion to diesel drive of the yacht LYNDONIA owned by Cyrus H. K. Curtis.

The new vessel for the Eastern Steamship Co. will be turbine driven with single reduction gears, driving twin screws, the steam being supplied by six single-ended Scotch boilers, burning fuel oil. She will have a speed of 18 knots and is 377 feet, 3 inches in length over stem and stern on deck, with a beam of 55 feet and a molded draft of 18 feet. She will be of the three-deck complete superstructure type with continuous promenade deck, an express passenger and freight ship with a cruiser type of stern and a bulbous bow and the stem raked forward.

Capt. Streckfus, 69 years old, identified with Mississippi and Ohio river steamboat navigation 47 years, died October 12. He was president of the Streckfus Steamboat lines.

Third Steamship for Clyde Line is Launched at Newport News

After Completion of the Mohawk
Two New Ships are to be Laid
Down at a Cost of Between Five
and Six Million Dollars—They are
to be Ready in Summer of 1926



The S. S. MOHAWK was launched at Newport News Shipbuilding and Drydock Co., Oct. 21.—The picture above shows the MOHAWK as she will look when completed

NOTWITHSTANDING that figures recently made public by Lloyd's register indicated a depression during the past four months in shipbuilding throughout the world, an optimistic feeling exists among American shipbuilders and operators, especially on the Atlantic coast, which is reflected in the pres-

months two merchant ships, each of more than 8000 tons displacement, have been turned out by this yard and placed in commission in the New York-Carolina-Florida coastwise service. These are the sister ships CHEROKEE and SEMINOLE of the Clyde line.

of the first group of sister ships floated under the Clyde line program referred to, an aggregate of about 25,000 tons, at a cost of six million dollars. Immediately following completion of this first trio of coast vessels, the Clyde line announced a program to build a second group especially for the Miami service, the latter ships



MISS MARGARET DENISON
Sponsor at Launching of S. S. Mohawk

ent activities at the yard of the Newport News Shipbuilding and Dry Dock Co., where the gigantic program of the Clyde Steamship Co. is being rushed to completion. Within the past seven

Steamship Mohawk

Full Steel Construction with Double Bottom

Length402 feet
Beam 54 feet
Draft 20 feet
Passenger capacity446 Persons
Freight capacity272,500 cubic feet
Gross Tonnage5,300 Tons
Displacement (loaded)8,140 Tons
Speed (average)16 knots
Fuel Oil capacity6,180 barrels
Steaming radius7,000 miles
Turbine Engines4200 shaft horsepower

Life Boat Equipment—Metallic life boats, including motor pilot boat. Welin mechanical davits. Total capacity for 585 people—approved for round-the-world service.

Special Devices—Automatic fire detecting apparatus, with steam, salt water and "Foamite" extinguishing systems. Condensing, evaporating, distilling and refrigerating plants.

Interior Finishings—White mahogany with golden tones; red mahogany with gray tones; also polished fumed oak. Artistic, leaded glass domes and windows distributing uniform natural light throughout public places.

Ventilation—Furnished by mechanical devices with individual control in each inside stateroom; in corridors, passageways and public places as well as throughout the cargo decks.

Electrical Equipment—Fans and berth lights in each room. Vacuum cleaning system throughout. Unusually elaborate lighting and cooking equipment.



H. H. RAYMOND
President of the Clyde Steamship Co.

The new MOHAWK left the ways at Newport News Oct. 21 under most favorable conditions and is the last

to attain a speed of about 20 knots and accommodate about 800 passengers on each vessel. These new Miami steamers will eclipse anything heretofore planned for coastwise trade and

are expected to be completed the middle of next year at a cost of between five and six million dollars, thus the Clyde line during the current year will have contracted for new coastwise equipment costing upwards of twelve million dollars.

The launching of the MOHAWK was witnessed by a large assemblage of citizens of Newport News, guests of the shipyard, and a party of Clyde line officials. The sponsor was Miss Margaret Denison of Rye, N. Y., daughter of J. B. Denison, first vice president of the Clyde line; and her maids of honor were Miss Mary Thompson and Miss Elizabeth Finck, both of New York city. The plans and specifications were drawn by Theodore E. Ferris, well known naval architect of New York, under the direction of H. H. Raymond, president of the Clyde line, who is credited with many innovations and improvements in coastwise construction of recent years.

A duplicate of her sister ships SEMINOLE and CHEROKEE, the MOHAWK is 402 feet long, 54 feet beam, of 8000 tons displacement, an oil burner equipped with turbine engines, and will have an average speed of 16 to 18 knots per hour. She will have accommodations for 446 passengers distributed throughout three passenger decks, and the accommodations will cover a wide range of choice from the ordinary two-berth stateroom, singly or en-suite, with and without connecting private lavatory and shower baths, to the de luxe hotel suite of bedrooms with private bath, also apartments consisting of parlor, bedroom and bath. There will be numerous and roomy public spaces, sumptuously furnished lounges, foyers and social rooms. These ships are planned especially for changing climatic conditions of the steamship lanes between northern and southern ports, and spacious sun decks, a large dancing deck, veranda cafe, and wide glass enclosed promenades all insure comfort in all kinds of weather.

Freight-carrying facilities are most modern in every respect. The freight decks are divided into water-tight compartments, brilliantly lighted and with ample side ports for quick handling of cargo. The holds and compartments are mechanically ventilated by numerous supply and exhaust fans and motors to insure fresh air and even temperature at all seasons and in all climatic conditions, for the protection and safe transportation of fruits, vegetables and other perishables. Ample facilities are also provided for the shipment of automobiles.

It is expected that the MOHAWK will be completed and ready for the peak

of the Florida season in January. The CHEROKEE was placed in commission on July 4 and the SEMINOLE entered service August 22. Identical in size, equipment and furnishings, these three sister ships are sufficient-



THEODORE E. FERRIS

Well known naval architect who designed the S. S. Mohawk

ly in advance of present day requirements to fill the constantly growing demands of the Florida trade for some time to come.

To Build Canal Boats

The department of public works, state of New York, has prepared plans and specifications for the construction and delivery at Barge canal terminal, Syracuse, N. Y., of six gasoline tow boats. These boats are to be of steel construction, 40 feet in length, 10 feet in breadth and 5 feet molded on side. The engine is to be of the four-cylinder, heavy duty marine type. Royal K. Fuller, commissioner of canals and waterways, Albany, N. Y., is in direct charge of placing the orders.

Three subsidiaries of the Todd Shipbuilding Corp., the Tebo Yacht Basin Co., Clinton Dry Docks, Inc., and the plant of the Todd Oil Burner & Engineering Corp. have been consolidated under the title of the Todd Dry Dock, Engineering & Repair Corp. J. Herbert Todd, former president of the Clinton Dry Docks, Inc. is president of the new consolidation.

The employees of the C. Hildebrandt Dry Dock Co. Connelly, N. Y., have been offered group life health and accident insurance by their employer.

Japanese Will Use Diesel Ships

Three new diesel ships are being placed in the around the world service of the Osaka Shosen Kaisha. The program calls for the sailing from Rio de Janeiro of the first of these vessels the SANTOS MARU on March 22, 1926. A 15-day service between Rio de Janeiro and New York will be given. These three new diesel vessels will replace three of the smaller type ships now in service. They will be equipped with Sulzer's diesel engines and are 7800 gross tons with a cargo capacity of 5400 tons and a frozen cargo capacity of 255 tons. Passenger accommodations provide for 70 first class and 700 third class. These vessels are to be provided with the most modern navigational equipment it is possible to secure, including the Sperry gyro-compass and gyro-pilot and visible air whistle. The vessels have up-to-date first class passenger accommodations with splendid saloon, smoking room, social hall, bars, veranda cafe, swimming tank, and broad promenade decks. Considering the efficiency and economy anticipated with the diesel engines, it will be more difficult than ever for old-fashioned American steamships to compete.

Bids for New Ferry Boat Opened

Bids were due to be received by Commissioner Mills on the new proposed ferry boat the AMERICAN LEGION, on Oct. 19. What the results of these bids are it has not been possible to definitely determine before going to press. The new ferry boat it is expected will be placed in service next July on the Staten Island municipal line. While in general similar to the PRESIDENT ROOSEVELT, which has demonstrated great service ability, many improvements will be incorporated in the new boat. The AMERICAN LEGION will be 264 feet in length, 14 feet longer than the PRESIDENT ROOSEVELT and will have a seating capacity of 1650 as compared with 1500 on the old vessel. The capacity for automobiles is also increased from 30 to 32. She will also have more reserve speed and power than the earlier boats. Plans and specifications were prepared by R. W. Morrell, naval constructor of the department, under the general supervision of William Wirt Mills, commissioner of plant and structures of the city of New York. Cost is limited to \$800,000.

Last Shred of Dignity Is Lost

Public Confidence

In Shipping Board Shattered

EMPHASIZING technicalities of the merchant marine act, the shipping board has set itself up in defiance of the President in his efforts to frame a policy for the merchant fleet. In taking this action so much strife has been stirred up within the last month that to all appearances the way is now paved for a most radical change which may mean the wiping out of the board altogether.

Henry G. Dalton, of the firm of Pickands, Mather & Co., Cleveland, who has been named by President Coolidge as his personal representative in a survey that will result in practical recommendations for a solution of the government shipping tangle has been proceeding with his task. In this he has had the cooperation of Chairman T. V. O'Connor, who did not vote on the resolution to oust Admiral Leigh C. Palmer from his post as president of the Emergency Fleet Corp. Mr. Dalton will make no statement of his procedure until his investigation is completed and is in the hands of President Coolidge. It would be no surprise, however, if his recommendations suggested a decided course in urging congress to make broad changes in the present management of the fleet.

The desire of President Coolidge to hold the shipping board's budget estimate down, possibly as low as \$15,000,000 for the next fiscal year, and Admiral Palmer's zeal in acting upon suggestions of the President, aroused the ire of the majority in the board. The board has asked for a budget estimate of \$22,000,000. Admiral Palmer succeeded in bringing about economies which resulted in cutting down appropriations from the annual figure of \$50,000,000 to below \$30,000,000. This was done by paring high salaries and reducing the number of ships in operation.

Coolidge Wants To Stop Waste

Unfortunately the shipping board is so constituted that President Coolidge has had to pursue a rather round-about course in attempting to achieve economy and one-man efficiency in executive direction of shipping policies. Under the regional divisions provided in the merchant marine act, the shipping board must have representation from the South, Pacific coast and other

sections, and shipping board members in the past have sought to obtain extra ships for routes from ports in which they were interested.

Resignation of Commissioner Frederick I. Thompson of Alabama was in protest to the probability that changes may be made in the shipping law looking to the abolishment of this regional representation. Commissioner Bert E. Haney's conflict with the President in regard to opposition to Palmer was based on the administration of western routes by Palmer.

Incidentally, a number of sections of the country feel that no one-man direction of the board will be acceptable. This is true of the South, and it is true in Oregon, which is supporting Haney. Cincinnati's chamber of commerce recently adopted a resolution calling upon its representatives and senators in congress "not to permit the shipping board to be divested of its authority."

Get Out of the Shipping Business

While some officials listen with sympathetic ears to the demands of the West and South for shipping, the tendency is to disapprove of the whole idea of the government being in the shipping business. This sentiment is growing. No reason is seen for a useless drain on the treasury to supply certain ports with services that are not justified. On the other hand, the President has his supporters for a one-man management of the board for the sake of efficiency. In fact, the conviction strongly obtains that eventually the board must recognize that the President has a right to be consulted as to the handling of such a vast amount of government property as lies in the hands of the board. It is believed strongly that the situation with regard to the operation of the government ships will not be stabilized until that principle has been firmly established.

Due to the muddled state of affairs, a deluge of resignations has occurred. Resignation of Sidney Henry as trustee of the Emergency Fleet Corp. has been accepted, and George K. Nichols was elected to succeed Henry. The new head of the Fleet corporation, Elmer E. Crowley, Massachusetts shipping man, and who has held previous posts under the shipping board, has appointed Mr. Nichols as assistant to the president.

From the Old Log Book

Stray Items About the Great Lakes, Atlantic, Pacific and Gulf Coasts and
Inland Rivers from MARINE REVIEW Files of 10, 20, 30 and 40 Years Ago

NOVEMBER 1885

IT IS a long cry to hark back 40 years but human nature was evidently much the same then as it is now. The *Marine Record* (then the name of MARINE REVIEW and published weekly) for November 5, 1885 quoted a contemporary as follows: "We don't know how many boats are running on the canal, or how many vessels ply the lakes, but we do know that the captains and owners thereof claim to do a losing business every season and have so claimed for ten years past, yet they keep at it and the only reason we can discover for their not abandoning their profession is that they make so many voyages that they can afford to lose something on each." Isn't it the old story of crying wolf? Those who might come to the rescue having been fooled so often, complacently feel that it is only another false alarm. And who can blame them?

* * *

The loss on November 7, 1885 of the Clyde built iron hull passenger steamer Algoma of the Canadian Pacific Line, wrecked in a storm on Isle Royal, Lake Superior, resulted in the death of 48 out of a total of 62 passengers and crew. Among those saved were her commander, Captain John Moore who was badly injured, eleven of the crew and only two passengers. The survivors were brought into Port Arthur by the steamer Athabasca.

* * *

So serious a disaster immediately set arguments going as to the superiority of wood over iron or steel as shipbuilding material. The Plain Dealer, Cleveland's leading newspaper, solemnly stated editorially, "that the fact was again demonstrated, that when an iron or steel vessel strikes the rocks she goes to pieces and goes quickly."

NOVEMBER 1895

IN THIS day of good feeling between the people of Canada and the United States it is hard to realize that only 30 years ago serious efforts

were being made to abrogate the treaty which prohibited the building or use of war vessels on the Great Lakes. A letter to the MARINE REVIEW of that day quotes Charles Cramp, the famous Philadelphia shipbuilder to the effect that the ships of the Canadian Pacific railway were built with a view to use in case of war and that they had gun platforms constructed ready for guns to be mounted on the shortest notice.

* * *

Mr. Cramp's suspicions of the good faith of our Canadian neighbors of that day have long since been forgotten. Now as then with tremendously greater resources in numbers of population and wealth our safety and security from attack in that quarter are amply protected. The true significance of this episode lies in the complete impossibility for responsible persons of the present generation to conceive of any warlike actions as between these two countries. It may therefore, be used as a striking example of the great distance that we have come away from truculence, from thin skinned bombastic national pride, from every thought of armed conflict to protect our rights and interests, and how we have come to consider any such cocky flights of imagination as absurd comic opera stuff, as far as Canada is concerned. If the same certainty of the impracticability of war existed between all other nations world peace would be a reality.

NOVEMBER 1905

THE lake bulk freighter JOHN STANTON still very much in active service was completed twenty years ago by the American Shipbuilding Co. at the Lorain yard in the record time of 70 days. Capt. Charles L. Hutchinson gave the order in 1905 for 1906 delivery but this order was followed by orders for twenty-five vessels from other steamship companies of which the American Shipbuilding Co. secured twenty. Under the circumstances it seemed best to try to make delivery of the STANTON during 1905. The keel was laid July 13 and the steamer began her maiden voyage on

Oct. 10, the time elapsed being three days less than three months. Subtracting Sundays, Labor Day, six half holidays and two days of bad weather during which no work was done the ship was constructed complete, machinery installed and with steam up in seventy working days. The work was done under the general supervision of Supt. Frank La Murche.

* * *

A report was given of the official tests of the self docking steel floating drydock Dewey completed early in June 1905 by the Maryland Steel Co., Sparrows Point, Md. The U. S. Battleship Colorado with a displacement of 13,300 tons and the U. S. Battleship Iowa with a displacement of 11,600 tons were each docked in turn.

NOVEMBER 1915

THE passing from the scene of activity of the Pacific Mail Steamship Co. as an American line operating on the Pacific is told in picture and story in the MARINE REVIEW ten years ago and this event is closely connected with the enforcement of the so-thought drastic and insurmountable provisions of the new seaman's act then recently passed.

* * *

After the war as operators of shipping board vessels the Pacific Mail Steamship Co. returned to the old service, only to be ousted again; this time by the successful bid of the Dollar company for the government ships and the route.

* * *

Captain Dollar seems to be able to get along in spite of the seaman's act. As a matter of fact the original seaman's act and subsequent laws intended to protect the rights of seamen is not now in the main greatly criticized by American operators. Not many or serious changes are now suggested even by the Steamship Owners association. Certain provisions of the law, however, could be changed to the benefit of the operators without in any way impairing the rights of seamen. Such changes should be made in the best interests of the merchant marine as a whole for the good of owners and men alike.

Photographs from Far and Near

A tribute to the men of Gloucester, Mass., who go down to the sea in ships, this heroic bronze figure has been erected in the famous fishing town to commemorate the three hundredth anniversary of its settlement.



Capt. John H. Diehl of the coastwise steamer City of Rome, which on Sept. 25 rammed and sank the Submarine S-51 off the Connecticut shore near Block Island. Only three of the crew were saved



New York's traffic congested waterfront is clearly shown in this photograph taken July 9, 1925, at 3:30 p. m. on West street in the vicinity of pier 25. Much valuable time is lost to ships.



Former U. S. S. Cassin in drydock at the Clinton plant, Todd Shipyards Corp. for general overhaul. First of her type to be taken over by the coast guard for service on the high seas against rum smugglers.

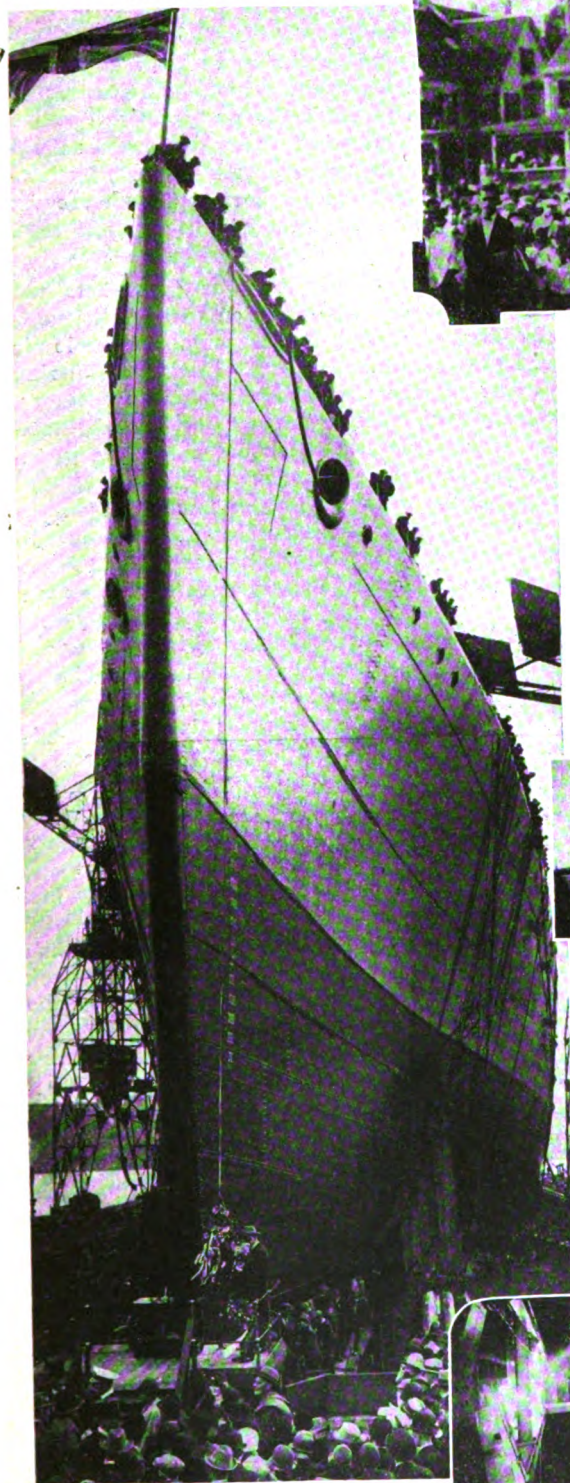


W. P. Cowen aground, Indiana Harbor Canal

Twin diesel engines being installed in the dredge Clackamas



H. M. S. Nelson latest British battleship was launched on Thursday, Sept. 3, at the Armstrong Yard, Walker-on Tyne. She will be the most formidable fighting craft in the world and will cost complete about \$35,000,000. Length 702 feet, beam extreme 106 feet, displacement loaded 35,000 tons and draft 30 feet. Her speed is not definitely known but will probably be at least 35 knots.



William Livingstone

1844-1925

IN THE death of William Livingstone, banker, and president of the Lake Carriers association, shipping on the Great Lakes has lost its staunchest champion and most outstanding personality. Although 81 years of age he was still actively engaged in business. His death came unexpectedly and was a great shock to his many friends and admirers. He was found dead in his office at the Dime Savings bank, Detroit, Saturday, Oct. 17. It was his custom to remain at his desk Saturday afternoons. When he did not return to his home at the usual hour his daughter telephoned. Receiving no response she hurried to his office and found him lying on a couch. Physicians say that death, due to heart disease, probably came while he slept.

He was born in Dundas, Ont., Jan. 21, 1844. At the age of 17 he went to Detroit then a city of 10,000 and lived to see it become a great metropolis and manufacturing center of over a million in population. The career of William Livingstone began with the fixed idea in the mind of the boy of 17 that determination to succeed would overcome all obstacles. And success in great measure came to him not only in the material things of life but in a full measure of respect and friendship from his fellow workers for sterling qualities of character and good fellowship. From his earliest years exceptional qualities of leadership were clearly evident. At the age of 20 he became general manager of the Pecheron Steam Navigation Co. and the Michigan Navigation Co. and from that day, for 61 years he has been a power in lake shipping. Intense, militant loyalty to the Lake Carriers association, which he built up and ruled with great ability and far seeing wisdom for many years, was recognized so clearly by his colleagues that his unanimous viva voce election as president each year had become a tradition which no member had the desire or temerity to question.

At the Lake Carriers last annual meeting in Detroit April 17, this year he expressed his great appreciation of the honor conferred upon him and said that he would rather be president of the association than United States senator from Michigan, an of-

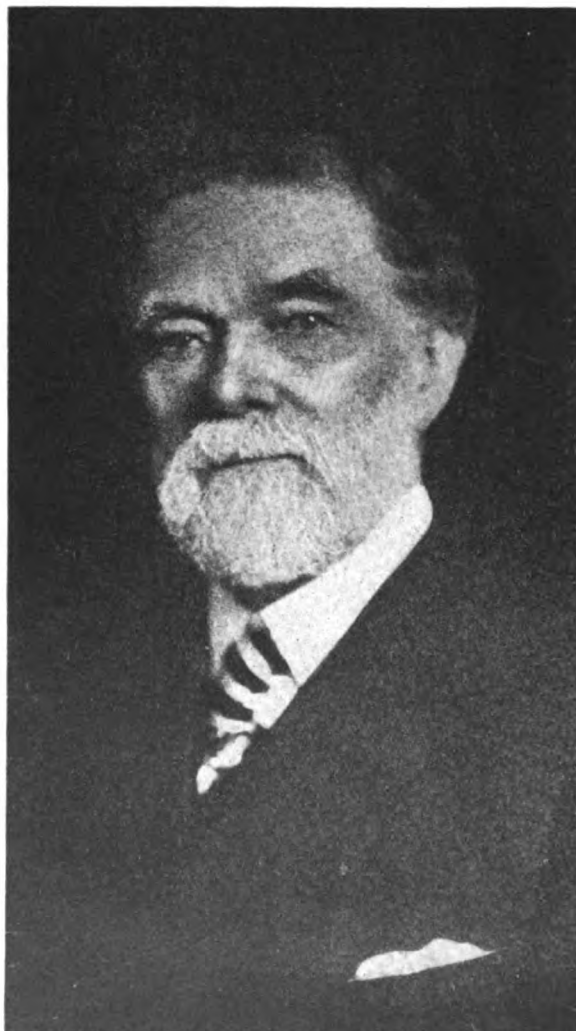
fice which in earlier years he could have had had he desired it. William Livingstone far more than any other man is responsible for the great projects carried out to deepen, improve and make safer the navigable waterways of the Great Lakes. This work wisely planned and energetically executed has returned untold millions, by lowering transportation costs, and has been a most important economic factor in the development of the iron and steel industry.

The last great effort of his life was devoted to the improvement of navigation by urging on with all the restless energy of his personality, the deepening of the lower Detroit river at the Limekiln crossing. During the Spring meeting he expressed the wish that he might live to see, this channel completed. This was not to be, but his memory will live in this his last work as it is already designated as the Livingstone channel.

No other man since the beginning of navigation on the Lakes has given so much unselfish devotion and intelligent thought combined with constructive execution, to extending the usefulness of these great natural waterways.

It is not too much to say that had William Livingstone not lived, navigation on the Lakes would not be at the advanced stage that it is today. And with all his strong aggressive personality he was kindly and generous and tolerant of the opinion and beliefs of others. Great qualities of courage and gentleness distinguished him and made even those with whom he fought respect him without bitterness. His work is done and his example should serve as an inspiration to those who now must assume the responsibility.

At the time of his death he was president of the Lake Carriers association, which comprises 739 vessels of 4,236,760 gross tons, president of the Dime Savings bank, Detroit; president of the Detroit Clearing House association and past president of the Bankers club of Detroit, the Michigan States bankers association and the American bankers association. He was a thirty-second degree Mason and a member of the Knights Templars. He was married in June, 1866 to Miss Susan Downie of Detroit who died three years ago. There were eight children.



Livingstone, A Man Among Men

Prominent Transportation Men Pay Tribute to
Late Head of the Lake Carriers Association

THE death of William Livingstone means more than the loss of a great leader to the shipping men of the Great Lakes. It means the loss of a greatly beloved and respected friend and associate whose wise unselfish counsel could always be depended upon. With all his rugged force of character he was never unscrupulous and he disdained taking an unfair advantage in his dealings with friend or foe. His sympathy and encouragement reached all. Some expressions of the high esteem in which he was held are given below.

George A. Marr

WILLIAM LIVINGSTONE—a man in whom forcefulness was combined with considerateness; ruggedness with gentleness. A man whose loyal devotion to his friends, sympathy with all in distress, ardent love of children and family and deeds of kindness will be remembered by innumerable people. He has left behind him many physical monuments of his earnest efforts on behalf of his city and the transportation system of the Great Lakes and his memory will linger always in the hearts of all who knew him.

Harvey D. Goulder

THE sudden death of Mr. Livingstone came as a great surprise, notwithstanding his advanced age and the shock of the death, last summer, of Mrs. Livingstone, who had been his very helpful companion for nearly 60 years. He had suffered a great loss within the year in the death of his eldest son. But he was a man of such abundant force and energy, both mentally and physically, and we had been so long accustomed to his prompt and vigorous and clear-headed action, that his sudden taking off comes as a shock, especially to all interested or in any manner connected with Great Lakes commerce. It is only a year ago that he was given a testimonial dinner on the completion of 60 years of active, devoted and invaluable labors in behalf of this, the greatest, the cheapest and the most useful waterway in the world, during the last 24 years of which he has been the choice and has acted as president of the Lake Carriers association, a business league including in its membership nearly all of the effective United States bulk freighters of the Great Lakes, which have come to carry in each eight-months' season more than one hundred million tons of cargoes.

During his 60 years active connection with every aid to navigation and advancement of the business, in which the ships have grown from 600 tons capacity to 14,000,

he showed far-sighted vision and enthusiasm in every development of this waterway and transportation system. There have come the great locks at the Soo, straightening, enlarging and deepening channels, coast lighting, establishment and improvement of coast guard service, removing shoals, preventing obstructions, culminating in the great channel at the lower end of the Detroit river, fitly named Livingstone channel.

Subscribing at the testimonial dinner appreciation of his labors, these old friends, including all that was representative in lake commerce, ships and shippers, officers and men, and many others in cognate relation with him for many years, the estimate of Mr. Livingstone as a man and friend and neighbor was feelingly expressed in these words:

"We regard, too, the broad-minded, generous friend, the man of intensive work and diverse activities, rewarded by success in material things, ready at all times to turn aside in sympathy, interest and helpfulness to any needing encouragement—a man valuable in every relation of life. We subscribe this in appreciation of his work and quality, and in token of our deep and affectionate regard for the friend, Mr. Livingstone."

Henry G. Dalton

AFTER an acquaintance of many years with William Livingstone, I can think of no trait in him that I did not admire. His great commercial and financial talent was combined with a personality sincere and delightful, augmented by a broad vision and will of accomplishment that are seldom to be found in the same character. Luckily for us in the Middle West, these latter two attributes were largely exercised in the development of the Great Lakes as a waterway, and it is no exaggeration to say that he has done more for lake shipping than anyone that has ever been interested in it.

In this long continued service for the development of our inland marine activities, he never has had one selfish motive. He gave freely of his valuable time to any project that would in any way enhance the value of the Lakes as a means of transportation, and he was never too busy to take up any subject that would make for the facility and betterment of our lake commerce. The honors that have been heaped upon him for his accomplishments along these lines, were always received by him with the most extreme modesty, and it is a great gratification to think that the magnificent Livingstone channel in the Detroit river will make his name continue to live for generations to come.

As a director of the Interlake Steamship Co., he was untiring, always eager to do his share, and his advice was sound. I consider that we have all lost a man among men.

He Represents the President

H. G. Dalton Chosen as Coolidge's Personal Representative — To Report on the Functioning of the Shipping Board With his Recommendations



TRULY American has been his rapid rise from humble beginning to national recognition and prominence.

AN AUTHORITY on Great Lakes shipping, he has been called by President Coolidge to national service.

HIS forceful character and keen facility for solving industrial problems will be devoted to America's Merchant Marine tangle.

AERICAN industry as the training school for the development of personal capacity for big things never was indicated more clearly than in the case of Henry G. Dalton, member of Pickands, Mather & Co., Cleveland, just appointed by President Coolidge as his personal representative in the solution of problems confronting the merchant marine of the United States. Rising rapidly from humble beginning to a position of prominence and authority bespeaks Mr. Dalton's industry, force and keen business insight. Mr. Dalton has impressed greatly his business contemporaries by his extraordinary powers of analysis and his judicial temperament.

His familiarity with the problems of Great Lakes shipping, on which subject he is an authority, has made him well qualified to assume the greater responsibilities of unraveling the tangled knarl in which the United States shipping board and Emergency Fleet Corp. have involved the American merchant marine. Practical knowledge of maritime administrative difficulties has been gained from his connection with lake marine affairs for over 40 years and his affiliation with Pickands, Mather & Co., operators of the second largest fleet on the Great Lakes. His entrance into the present shipping difficulty offers him an opportunity to contribute materially to the commercial prosperity of the United States. Mr. Dalton is undertak-

ing his first public service of any magnitude, other than his membership on the steel committee, working in connection with the War Industries board at Washington during the war.

Although denied the opportunity to take advantage of higher education himself, Mr. Dalton is interested keenly in educational progress. In June, 1924, he donated to Kenyon college, Gambier, O., \$400,000 to construct the Samuel Mather Science hall.

The rise of Mr. Dalton in the iron and steel industry from a boy on the ore docks to supervision of all activities of one of the largest iron ore, mining, shipping, pig iron and coal interests in the industry has been remarkably rapid.

Mr. Dalton was born in Cleveland, Oct. 2, 1862. At the age of 16 he entered his first business experience at the Erie Ore Docks, Cleveland. The efficiency and energy displayed as a young man in his work on the ore docks attracted attention of his superiors and in 1883 he was taken into the central office of Pickands, Mather & Co., with which he has been connected since.

In addition to his direction of Pickands, Mather & Co., Mr. Dalton is president of the Interlake Steamship Co., vice president of the Youngstown Sheet & Tube Co. and a director of the Steel Co. of Canada. He is a member of the American Iron and Steel institute.

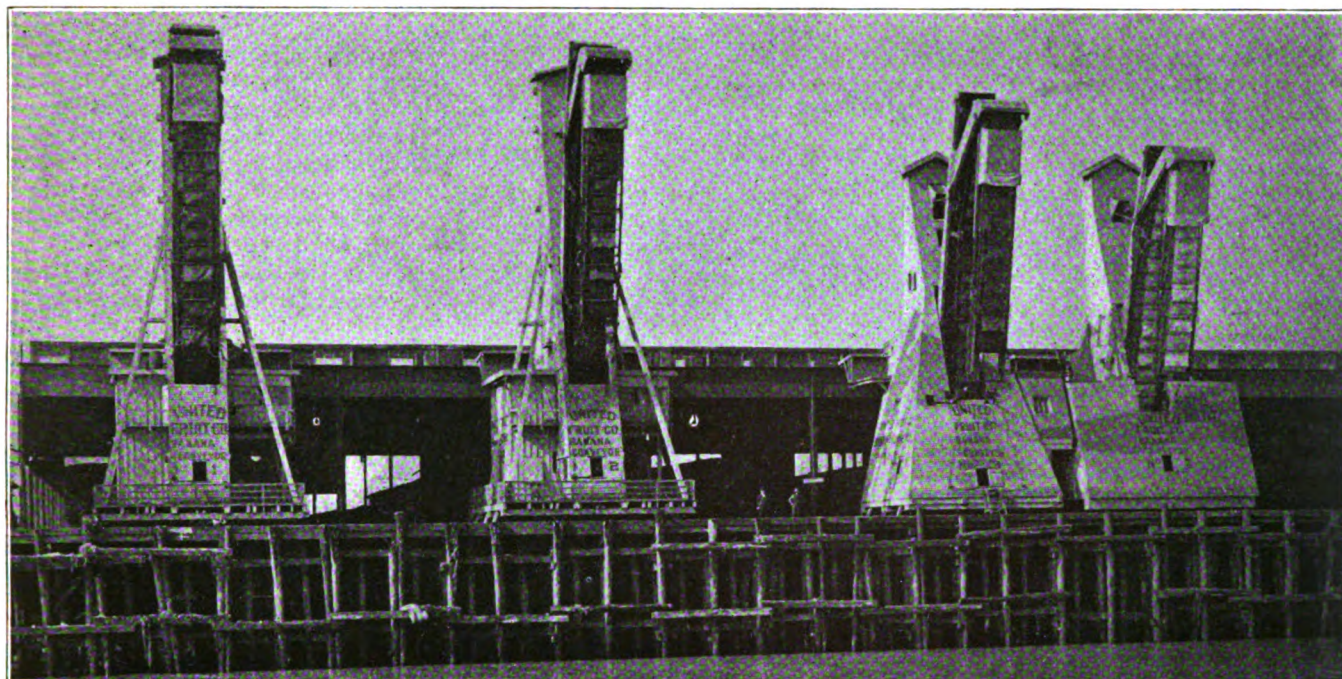


Fig. 1—Banana unloading machines on the dock at New Orleans—The arms can be dropped down into the holds of the vessel—Each machine has a capacity of 2000 bunches an hour

Reduce Time in Delivery of Bananas

To Ten Days from Plantation to Consumer

BY H. R. SIMONDS

THE great variety in vessel borne freight entering and leaving American ports today has brought about the development of highly specialized dock handling apparatus. Thus huge electro magnets are used for pig iron, blowers and belt conveyors for grain, elevators for dumping entire freight cars of coal and industrial tractors for miscellaneous boxed freight. One of the most specialized commodities handled in quantity is bananas. The banana trade to the United States, has grown by leaps and bounds during the last 15 or 20 years, and has now reached the proportions of 23,000,000 bunches a year, which makes it necessary to adopt highly specialized methods of handling at the various ports where this fruit is received.

The United Fruit Co. is the unrivaled leader in the development of the banana industry and has spent a great deal of thought and effort in establishing sufficient means of handling the fruit at its docks as well as at the many other points in the long journey from the plantation to the consumer. Transportation is one of the most important factors in the banana industry. It is so important in fact that officials of the United Fruit Co. have said that their success has been dependent upon the methods they have developed for quick

and careful transportation of the fruit.

Before tracing the travel of a bunch of bananas through the United Fruit Co. system it will be worth

Banana Discharge Record in Great Britain

On June 13, a paragraph appeared reporting the discharge at Avonmouth of 64,500 stems of bananas in eight working hours, an average of 8750 per hour. The paragraph went on to remark that Garston had beaten this record on two occasions, October 12, 1923, and August 27, 1923, in the discharge, in both instances, of the steamer MIAMI, the figures being 83,002 stems and 82,814 stems respectively.

It was stated in the paragraph appearing on June 13 that the Garston records were secured under the old system of discharge, viz., by manual labor. As a matter of fact, such was not the case, as electric elevators were used. These electric elevators have been employed ever since Elders and Fyffes introduced the banana business to Garston in 1912.

—*Liverpool Journal of Commerce*, June 24, 1925.

while to give some idea of the extent of the business itself. During one year about 1000 cargoes of bananas

are unloaded at the various docks of the United Fruit Co. At New Orleans, which receives more bananas than any other port in the world, solid trains of bananas are run North to Chicago and also West to the Pacific Coast. The company has 45,000 cars which are used in this service, most of them refrigerator cars. It also operates a fleet of 90 ships including its English fleet and some chartered steamers. It owns 38 vessels of which 31 are refrigerator fruit ships used exclusively and practically continuously in the business of transporting bananas.

To follow in detail the journey which bananas take from the plantation to destination in American cities is beyond the scope of the present article. Briefly, large plantations have been developed at Columbia, Costa Rica, Panama, Guatemala, Honduras and Jamaica. These plantations have been connected with the ports by specially built railroads. At the tropical ports extensive shiploading equipment has been installed. The illustration marked Fig. 2 shows a vessel at the port of Almiranta, Panama, loading bananas at the rate of 75,000 bunches in 12 hours. So important is it to have the fruit reach its market as soon as possible after it is picked that its transport follows strict schedules and the time required for handling is

reduced to a minimum. The bunches of bananas on the plantations are cut at a given date for shipment on a given steamer. From the plantation to the port the bananas are carried in long trains of specially constructed ventilated box cars. The arrival of these cars on the docks is a signal for the army of workers to jump into action. The whole scene is one of

is then circulated by fans throughout the fruit holds. During the voyage careful check is kept of the temperatures at different points of the vessel.

Quick Discharge at Destination

On arrival at the port of destination the elaborate but carefully managed system of unloading is immediately set in operation. At New Or-

banas from one point to another and of providing a means of inspection and sorting. Thus the modern banana dock becomes a place of throbbing industry during the time that the vessels are unloading. From the main longitudinal belt line transfer belts carry the bananas, sorted as to the number of "hands" to the bunch, directly to waiting cars where they are loaded for rail shipment.

At Boston, where the pier is not a railway terminal the belt conveyors have not yet been introduced although this and other systems are at present under careful consideration. Fig. 4 shows the method of unloading bananas by placing stevedores on stages in the hatches of the vessels, and then passing the fruit from one man to another, either out through the side ports or up through the deck hatches. To prevent the fruit from chilling in winter canvas curtains are hung around the open ports.

To increase the speed of discharging, both sides of the steamship are



FIG. 3—HORIZONTAL BELT CONVEYORS TRANSFER BANANAS DIRECTLY FROM UNLOADING MACHINES

ceaseless activity until the cargo has been safely transferred from the train to the pre-cooled holds of the vessel.

The conveyors shown in Fig. 2 consist of endless belts carrying canvas pockets, one for each bunch of bananas. The lower end of these conveyors comes close to the waiting train and the bunches of bananas are taken from the train by hand and placed in the pockets, from which they are then delivered directly into the hold of the vessel where they are again taken by hand and carefully piled in ventilated stacks.

The problem of keeping bananas cool during shipment is somewhat different from that met in the transportation of meat; for bananas during the process of ripening give off a great quantity of heat. The hold of a modern banana carrying steamship is divided by several decks each of which is further divided by vertical partitions. These partitions and in fact the entire vessel is insulated to prevent transmission of heat. Modern refrigerating machines with capacity greater than that required for meat carrying vessels cool and dry the air which

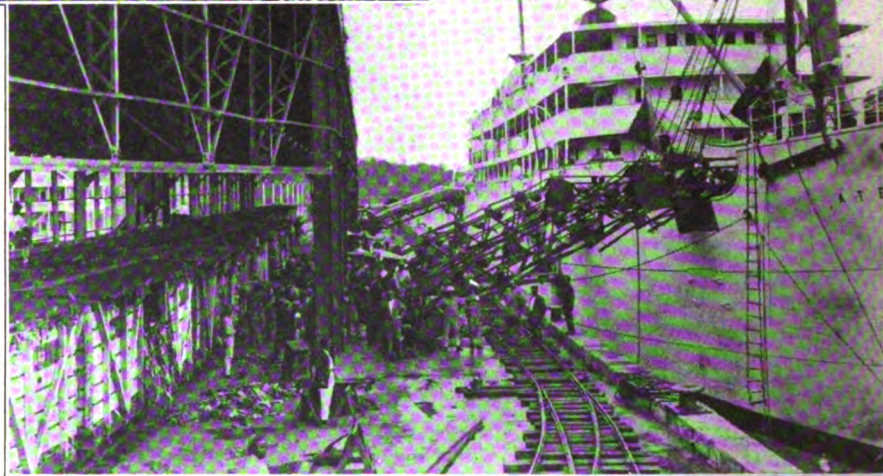


FIG. 2—LOADING ONE OF THE UNITED FRUIT CO SHIPS AT ALMIRANTA, PANAMA. CONVEYORS ARE USED DIRECT FROM RAILROAD CARS TO SHIP

leans and some of the other ports the piers are equipped with unloading machines each having a capacity of 2000 bunches an hour. Some of these machines are shown in Fig. 1. Here again the principle used is that of an endless chain of canvas pockets into each of which a bunch of bananas is placed. These machines, however, discharge automatically onto horizontal belt conveyors such as shown in Fig. 3. These conveyors perform the double duty of transferring the

utilized. On the off shore side a float or ferry carrying railroad cars is moored to the vessel and the fruit is then unloaded directly into these cars. On the wharf side the unloading is either direct into waiting motor trucks on the wharf or else across wharf into railroad cars on floats on the opposite side of the pier. During unloading checkers keep a careful count of the number of bunches and also reject from further shipment any fruit which shows a degree of

maturity beyond that desired. The freight cars which are loaded on the ferries or floats are transferred to railroad terminals and thence are shipped over land to the interior points of destination.

Nothing Is Left to Chance

Speed in delivery is emphasized at every point. The organization of unloading has been carefully worked out through long experience so that each man knows his job and performs it with minimum delay. The schedules in all departments work with almost clock-like regularity, all set in motion by the zero hour which is the time that the vessel actually arrives within hailing distance of the port. This zero hour as in practically all marine operations is subject to unavoidable change. However, the radio during recent years has cut down the uncertain element to a minimum and the time of arrival of each vessel may be fairly accurately determined fully 12 hours before it docks.

In the early days of the banana industry when vessels arrived at comparatively infrequent intervals without much preliminary notice, a great scramble to secure sufficient experienced stevedores was almost invariably the result. Now with vessels arriving at frequent and remarkably regular intervals, it is possible to maintain a crew of experienced men. At Boston the development of a large

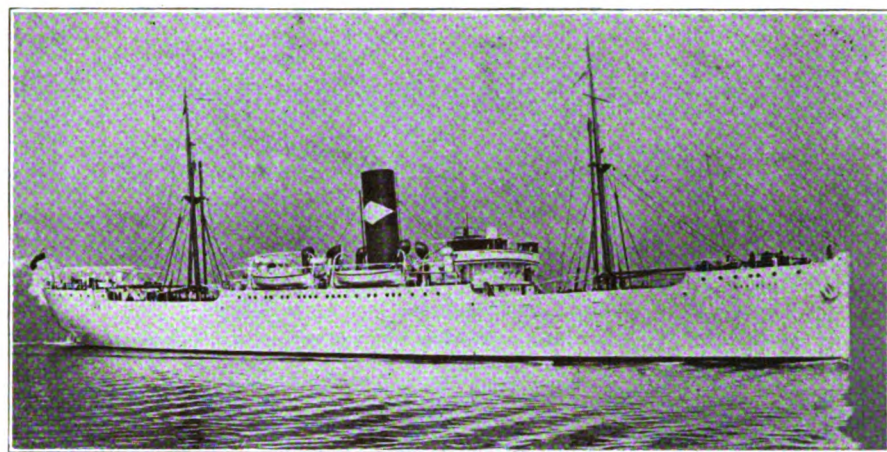


FIG. 5—THE UNITED FRUIT CO STEAMER SAN BLAS ARRIVING AT BOSTON WITH A CARGO OF BANANAS FOR NEW ENGLAND AND THE MIDDLE WEST—THE FINE APPEARANCE OF THIS VESSEL IS TYPICAL OF THE ENTIRE FLEET

general freight trade for the vessels on their return trip to the tropics has provided an excellent means of maintaining a fairly level time labor curve. When a banana laden vessel docks, all other activity on the pier as far as possible is suspended and every effort devoted to speedy unloading. However, when once the vessel has been unloaded of its perishable cargo, the process of loading general freight and of carrying on the business at the dock follows the more usual lines of evenly distributed work. Small truck tractors and trailer trains are then put into operation. Sometimes two or even three vessels are loading freight for export

at the same time, and the speed and concentration of effort is then regulated to accord with the carefully worked out sailing schedules.

Transportation System Ably Managed

The whole business of transportation which includes the handling of freight as well as of bananas is carried on as one great department of the United Fruit Co. and its present state of efficiency has only been possible as the result of years of experience and close attention to detail. Each dock is placed in charge of an efficient manager whose duty it is first to unload the incoming bananas at top speed, and secondly to keep his labor costs low. The general air of system and efficiency is to be discovered at all docks. The uncertainties of sea shipment have been reduced to a minimum and the whole handling problem including that of transportation has been so successfully solved that bananas, on an average, are in the consumers' hands ten days after being picked compared with an average of 20 days but a few years ago. This achievement has been accomplished by the utmost attention to all details in connection with dock management and cargo handling in conjunction with similarly careful and efficient operation of the ships themselves. Though these methods are specialized the underlying principles are applicable to speed up and minimize the cost of handling cargo in other lines. The definite determination to overcome difficulties and to cut out the slack wherever found is bound to give results.

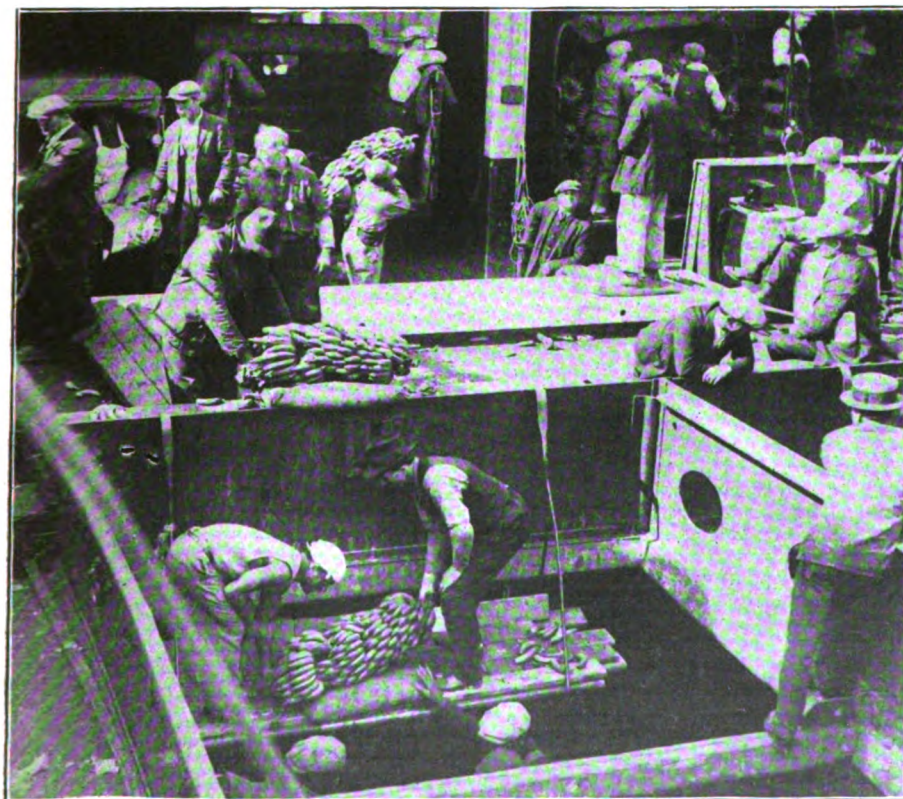


FIG. 4—SHOWS HAND METHODS OF UNLOADING AT BOSTON

Leatham D. Smith Dock Co., Sturgeon Bay, Wis., is converting a canal size steamer, the LAKEWOOD, into a self-unloading sand sucker for interests in Buffalo. The use of the company's patented self-unloader in the boat, assures quick discharge.

Late Decisions in Maritime Law

Legal Tips for Shipowners and Officers

Specially Compiled for Marine Review

By Harry Bowne Skillman

Attorney at Law

TOWAGE service is ordinarily distinguished by the fact that it is aid rendered in the movement of vessels not in distress, while "salvage service" is confined to aid rendered to those in distress, it was declared in the case of *MERCER*, 297 *Federal Reporter* 981, wherein it was held that where salvage services were furnished to a tug and tow in distress, both the tug and tow were liable for the services, though the primary liability for the full amount should rest upon the tug.

Service rendered by towing tugs in saving their tow, which became endangered during the towing without their fault, was an extraordinary service, not within the contract, and for which they are entitled to salvage compensation, though much less than would be a proper allowance to an independent salvor. A difference is to be noted between towage at sea, where it is necessary to take into consideration dangers arising from wind and weather, and towage in a protected harbor. A towage service may be converted into a salvage service.—*CITY OF PORTLAND*, 298 *Federal Reporter* 27.

"When a tug master has brought his tow to her place of destination, and moored or landed her safely at that destination, his task is completed, and he is discharged from further liability."—*O'Boyle v. Cornell Steamboat Co.*, 298 *Federal Reporter* 95.

"Although his power may be greatly restricted and he may have no control over the funds, a master who in fact exercises the ordinary duties of a master at sea has no lien for his wages."—*MARINER*, 298 *Federal Reporter* 108.

A ship chartered by the United States, and subchartered by it to another, is not, while under the subcharter, being "operated by or for the United States," within the meaning of the suits in admiralty act, and the owner cannot maintain a suit in personam against the United States for her injury by the subcharter, it was decided in the case of *N. S. Byonnes & Son Dampskibssrederi Aktieselskab v. United States*, 298 *Federal Reporter* 123; the remedy given by suit in personam against the United States runs only for those who may be regarded as either treating with the ship or suffering from her faults, and is not available to her owner.

Where maritime liens, enforceable in personam against the United States,

arose when the work was complete, the fact that the United States no longer owned the vessel when the libel was filed was immaterial, it was held in *Morse Dry Dock & Repair Co. v. United States*, 298 *Federal Reporter* 153. It was also decided that if the agreement under which a charterer or conditional vendee is in possession of a vessel permits the creation of liens by him, a repair or supply man will not be prejudiced by failure to make inquiry as to its terms, because inquiry will only disclose that fact.

"By the general maritime law, no lien for supplies or labor furnished a vessel is assumed to arise on a contract made by the owner, but proof is required that the minds of the parties meet on a common understanding that such a lien should be created. *** It is not sufficient under the general maritime law that the party who furnished the labor or supplies gave credit, so far as his own intentions were concerned, to the vessel and would not have furnished them, except on the belief that he was acquiring a lien for them, or that the owner or agent of the vessel believed that the supply man would acquire a lien by furnishing supplies. The undisclosed mental condition of the parties is ineffectual to create a lien. While an understanding between the parties may be inferred from facts as well as from express language, it must either have been expressed or inferred from the circumstances in order to bring it into operation."—*Grays Harbor stevedore Co. v. United States*, 298 *Federal Reporter* 159.

A charter party providing for furnishing of full and complete cargo, "not exceeding what she can reasonably stow," was construed in the case of *Anderson v. Mente*, 298 *Federal Reporter* 164, to mean that the vessel should be loaded with a full cargo, less space required for necessary coal, freight to be determined by the number of tons of cargo carried, and that capacity of vessel should fairly resemble identification mentioned in the descriptive clause. There is a presumption, it was further held, that everything shipped on the ship under charter was for account of those who had the entire ship for voyage, and they are liable for freight.

The furnishers of supplies to a vessel on the order of the owner is not entitled to a lien therefore as against a prior mortgage prohibiting such liens, where such mortgage was recorded at another port and was not indorsed on the vessel's documents as re-

quired by the ship mortgage act, to give it the status of a preferred mortgage.—*NORTHERN WAVE*, 298 *Federal Reporter* 188.

A continuous duty is imposed upon the owner of a wrecked boat to buoy the same, and he cannot escape liability for damages to a tow striking the wreck by buoying the same, where the buoy was carried away, but he must show why he did not watch the buoy, what efforts he made, and what prevented him, when it carried away, from substituting a new one. The owner of a wrecked boat in a channel without a buoy was liable for damage to a tow which struck the wreck, although the tow knew the wreck was in the channel, but did not know the exact location.—*CHAMBERS*, 298 *Federal Reporter* 194.

A shipowner would not in any event be responsible for the negligence of the master in matters of navigation, or except in matters in which he represented the owners, and which were nondelegable.—*Banks v. Herbert May Co.*, 298 *Federal Reporter* 283.

A contract of sale is not a maritime contract, so as to give the admiralty court jurisdiction, even though its performance involves carriage of goods on the seas to the place of delivery.—*Luckenbach Steamship Co. v. Gano Moore Co.*, 298 *Federal Reporter* 343. A bill of lading for transportation by ship is a maritime contract.—*Hidalgo Steel Co. v. Moore & McCormack Co.*, 298 *Federal Reporter* 331.

A preferred mortgage owned on a bark by the United States under the ship mortgage act has priority over all claims against the vessel, except preferred maritime liens and expenses and fees allowed and costs taxed by the court. The preferred maritime liens, said the court in the case of *MOSHULU*, 298 *Federal Reporter* 348, are: (1) Liens arising prior in time to the recording and indorsement of the preferred mortgage; (2) liens for damages arising out of tort, for wages of a stevedore, when employed directly by the owner, operator, master, ship's husband, or agent of the vessel, for wages of the crew of the vessel, for general average, and for salvage, including contract salvage.

Where a tug is navigating in a severe wind, it is the duty of the tug to have a deck hand on deck whose sole duty it is to maintain a lookout.—*MARY T. TRACY*, 298 *Federal Reporter* 528.

Late Flashes On Marine Disasters

Brief Summaries of Recent Maritime Casualties—
A Record of Collisions, Wrecks, Fires and Losses

NAME	DATE	NATURE	PLACE	DAMAGE RESULTING	NAME	DATE	NATURE	PLACE	DAMAGE RESULTING
Argosy	Sept. 14	Ashore	Sable Island	Not stated	King Edward	Sept. 3	Collision	Rosario	Not stated
Abbie C. Stubbs	Sept. 21	Collision	Near Gannet Rock	Not stated	Kimigayo Maru	Sept. 10	Ashore	Quelpart	Not stated
Alexander Clark	Sept. 27	Fire	New York	Slight	Kinghorn	Sept. 21	Collision	Rotterdam	Portside
Annam	Oct. 7	Ashore	River Elbe	Floated	La Salle	Sept. 17	Collision	Detroit	Damaged
Albatre	Aug. 31	Disabled	Las Palmas	Boilers —	London Mariner	Sept. 27	Fire	Cargo	Not stated
Antonia	Sept. 1	Collision	Rame Head	air pump	Laomedon	Oct. 5	Disabled	Not stated	Prop. lost
Armentieres	Sept. 2	Sank	Barkley Sound	Not stated	Laketon	Oct. 12	Disabled	Goderich	Shaft
Acasta	Sept. 4	Collision	Sea Reach Buoy	Stem and bows	Laconia	Sept. 6	Collision	Nantucket Light	Not stated
Algores	Sept. 8	Ashore	Dunfanaghy	Not stated	Lucia P. Dow	Sept. 6	Collision	Hamburg	Cylinder
Azhios Dimitrios S. V.	Sept. 12	Sank	Piraeus	Total loss	Loki	Sept. 10	Disabled	Orchari Wharf	Sank
Albatross	Sept. 17	Gale	Bromborough	Sank	Larne	Sept. 24	Collision	Point Sur	Propeller
Amrum	Sept. 21	Ashore	Sibutu Passage	Floated	Lena Luckenbach	Sept. 25	Disabled	Not stated	Not stated
Baracca	Sept. 19	Disabled	New York	Engine	Milwaukee	Sept. 20	Collision	Guantanamo	Not stated
Beni. A Van Brunt	Sept. 20	Collision	Not stated	Sank	Mary Luckenbach	Sept. 26	Ashore	Havana	Not stated
Bayton	Sept. 29	Aground	Port Lambton	Floated	Mont Agel	Sept. 27	Fire	Key West	Boiler
Brasilien	Sept. 29	Fire	Petrograd	Cargo	Madinina	Oct. 3	Disabled	Rouen	Rudder
British Marshal	Sept. 2	Aground	Pearl Rock	Not stated	Marguerite Finaly	Oct. 8	Disabled	Hoboken Pier	Refloated
Booyalla	Sept. 7	Stranded	Watson Rock	Floated	Macgonne	Sept. 6	Sank	St. Katherine's Dock	Not stated
Benten Maru No. 3	Sept. 8	Typhoon	Kabafuto	Sank	Mac	Sept. 2	Sank	Willamstad	Considerable
Bolsella	Sept. 18	Ashore	Bet Island	Floated	Martina	Sept. 9	Collision	Secondee	Cargo
Baracca	Sept. 21	Disabled	New York	Engine	Monafrie	Sept. 10	Fire	Kaiser Wilhelm Canal	Stern
Beni. A Van Brunt	Sept. 20	Collision	Norfolk	Sank	Margarete	Sept. 17	Collision	River Mersey	Engines
Beatrice	Oct. 9	Aground	Deep Water Point	Floated	Narragansett	Oct. 2	Disabled	Tyne	Slight
Carmel	Sept. 13	Disabled	Cape Mendocino	Not stated	Naprelak	Aug. 31	Collision	Montreal	Slight
City of Rome	Sept. 26	Collision	Cleveland	Starboard wheel	Norwich City	Sept. 16	Collision	Near Needles	Floated
City of Buffalo	Oct. 11	Disabled	Cleveland	Starboard wheel	Orbita	Sept. 19	Ashore	Ardornish Point	Not stated
Col. James M. Schoonmaker	Sept. 2	Collision	Saulte Ste. Marie	Slight	Osprey	Sept. 4	Ashore	Hogland	Floated—bottom
Capitaine Le Masne	Sept. 10	Struck buoy	Middlesbro	Not stated	Ostrobotnia	Sept. 7	Ashore	Motrib	Engine
Cabo Villano	Sept. 10	Fire	Alicante	Not stated	Ocean	Sept. 10	Disabled	Hiorleifshofde	Total wreck
Chita Maru	Sept. 14	Collision	Shimonoseki	Sank	Otto Flohr	Sept. 27	Ashore	Detroit	Damaged
City of Athens	Sept. 12	Disabled	Not stated	Prop. shaft	Promisee	Sept. 17	Collision	New York	Slight
Cymric Pride	Sept. 15	Collision	Woolwich	Not stated	Perseus	Sept. 28	Disabled	Soo	Wheel
Cairnross	Sept. 15	Collision	Newcastle Quay	Not stated	Pennsylvania Sun	Oct. 2	Aground	Peat Patch Island	Floated
Cap Lopez	Sept. 20	Ashore	River Senegal	Floated	Plymouth	Oct. 5	Disabled	Vineyard Sound	Propeller
Carmen	Sept. 27	Disabled	Helsingoer	Rudder	Portlock	Oct. 9	Disabled	Huckleberry Is.	Float
Dieuze	Sept. 25	Fire	Pictou	Total loss	Peter Reiss	Oct. 5	Disabled	Two Harbors	Wheel
Dampre	Sept. 1	Collision	Tyne	Port bows	Price McKinney	Oct. 11	Disabled	Lake H. r. n	Rudder
Dampen	Sept. 21	Disabled	W. of Skudenaeas	Rudder	Pennant	Sept. 4	Collision	Sea Reach Buoy	Sank
Deister	Sept. 21	Grounded	River Scheldt	Floated	Pelher	Sept. 3	Sank	Alexan Iria	Not stated
Dansonla	Oct. 7	Sank	Berkeley Flats	Not stated	Pengreep	Sept. 7	Disabled	Buenos Ayres	Propeller
E. T. Douglass	Sept. 24	Struck dock	Buffalo	Stern	Pakeha	Sept. 10	Collision	Lightship Elbe	Decks
Empress of France	Sept. 23	Disabled	St. Catherine's Pt.	Rudder	Puloe Brani	Sept. 17	Collision	Quebec	Not stated
Edward Smith	Sept. 23	Struck bar	Richibucto Harbor	Total loss	Rochelle	Sept. 15	Fire	San Francisco	Cargo
Ellerdale	Sept. 23	Ashore	Bras d'Or	Floated—leaking	Remuera	Sept. 9	Collision	Willemstad	Rails and stern
E. H. Gary	Sept. 30	Grounded	Superior	Floated	Rheinland	Sept. 14	Grounded	Amsterdam	Not stated
Emil Kirdorf	Sept. 1	Fire	Not stated	Cargo	Rebecca C. Scott	Sept. 27	Stranded	Pet. Bois Island	Floated
El Albeto	Sept. 2	Ashore	Baltimore	Floated	Rhodolite	Sept. 23	Stranded	Buckton Cliffs	Floated
Ettore	Sept. 2	Disabled	Ponta Delgada	Machinery	Sandon Hall	Sept. 4	Fire	Brisbane	Not stated
Evge	Sept. 17	Grounded	Karysto Bay	Not stated	Scharhorn	Aug. 25	Collision	Hamburg	Not stated
Empress	Sept. 22	Collision	Dover Harbour	Slight	Sudbury	Sept. 16	Fire	Baltimore	Not stated
F. A. Bailey	Sept. 18	Grounded	Lake St. Clair	Floated	Seneca	Sept. 21	Disabled	Charleston	Engine
F. L. Bobbins	Oct. 1	Disabled	Cleveland	Air pump	Sac City	Sept. 21	Disabled	Antwerp	Propeller
Frank G. Drum	Sept. 14	Ashore	Port Costa	Floated	Supportco	Sept. 22	Disabled	New York	Engine
Flora	Sept. 16	Fire	Buenos Ayres	Not stated	Silverpine	Sept. 28	Disabled	Perim	Machinery
Frisia	Sept. 17	Struck buoy	Newcastle	Not stated	Slavic Prince	Oct. 2	Struck bank	Suez Canal	Leaking
Glencaly	Sept. 18	Stranded	Lake St. Peter	Not stated	Stiklestad	Oct. 5	Disabled	Not stated	Prop. shaft
Gro	Sept. 20	Fire	Norfolk	Not stated	Stranger	Sept. 28	Fire	Mobile	Considerable
George Washington	Sept. 23	Aground	Near Bremerhaven	Floated	Secundus	Oct. 6	Disabled	Fort de France	Machinery
Guide	Sept. 3	Collision	Newcastle-on-Tyne	Not stated	S-51	Sept. 26	Collision	Block Island	Sank
Guernica	Sept. 21	Struck breakwater	Rotterdam	Slight	Sheevra	Sept. 10	Ashore	Ballyholme Bay	Not stated
Gotaland	Sept. 21	Collision	Rotterdam	Not stated	S. B. Way	Sept. 10	Ashore	Fox Point	Floated—leaking
Helen C.	Sept. 16	Stranded	Keelung	Not stated	Sourabaya Maru	Sept. 21	Ashore	Sibutu Passage	Not stated
Helmloch	Sept. 21	Fire	Lizard	Not stated	Stettin	Sept. 22	Disabled	Hamburg	Engines
Harvey H. Brown	Sept. 23	Struck obstr.	St. Clair River	Blades and shaft	Sarrebourg	Sept. 21	Disabled	Brest	Machinery
Handicap	Oct. 6	Fire	Barcelona	Cargo	Seneca	Sept. 22	Disabled	Charleston	Machinery
Hardenburg	Sept. 3	Aground	Rystrroom	Floated	Truxillo	Sept. 13	Disabled	Bermuda	Boiler
Herakles	Sept. 3	Collision	Rosario	Not stated	Thomas H. Wheeler	Sept. 1	Disabled	Middlesbro	Propeller
H. W. Baxter	Sept. 2	Ashore	Port Townsend	Floated	Thorsdal	Sept. 1	Struck quay wall	Ardrossan	Stem—port side
Hugin	Sept. 8	Collision	Brunsbüttelkoog	Damaged	Trelleborg	Sept. 10	Grounded	Whitgift	Floated
International	Oct. 1	Fire	Staten Island	Considerable	Vesta	Sept. 27	Disabled	New York	Wheel
Ingram	Sept. 10	Collision	Lightship Elbe	Damaged	Veta	Sept. 1	Disabled	Stornoway	Rudder post
Ilmar	Sept. 17	Collision	Kaiser Wilhelm Canal	Not stated	Velta	Sept. 4	Collision	Flushing	Not stated
J. J. H. Brown	Sept. 18	Collision	Lake St. Clair	Bow	Venus	Sept. 7	Grounded	Saloum River	Not stated
J. W. Van Dyke	Sept. 16	Aground	Marcus Hook	Not stated	Vondel	Sept. 17	Ashore	Singapore Straits	Not stated
Jufuku Maru	Oct. 1	Fire	Hamburg	Cargo	Valsallice	Sept. 24	Stranded	Off Hela	Floated
Julius C. Flannery	Oct. 1	Fire	Staten Island	Considerable	William J. Olcott	Oct. 5	Grounded	Detroit River	Floated—plates
John C. Meyer	Sept. 28	Struck ledges	Cross Island	Floated—slight	Wyandotte	Sept. 24	Ashore	Nr. Harbor Beach	Not stated
Jason	Sept. 23	Collision	Cuxhaven	Bulwarks	W. Woolven	Sept. 1	Collision	Rame Head	Sank
Joseph Clark	Oct. 10	Fire	New York	Not stated	Wheatmore	Sept. 1	Grounded	Three Rivers	Floated
Keren	Sept. 4	Aground	Off Ceuta	Floated	Wheatmore	Sept. 15	Collision	Woolwich	Not stated
Katherine	Sept. 30	Disabled	Near St. Kitts	Not stated	Woron	Sept. 14	Grounded	Shimonoseki	Floated
Karamu	Sept. 4	Collision	Not stated	Sank	White Fox	Sept. 24	Grounded	Horse Channel	Floated
Kent	Sept. 4	Fire	Auckland Harbour	Considerable	W. G. Pollock	Oct. 13	Aground	Bele Isle	Floated
Keren	Sept. 3	Ashore	Near Ceuta	Not stated	Yosemite	Sept. 18	Collision	Lake St. Clair	Badly
					Yorck	Sept. 15	Fire	Bremerhaven	Bunkers

Marine Business Statistics Condensed

Record of Traffic at Principal American Ports for Past Year

New York

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	449	1,960,366	505	2,117,563
August	469	1,889,239	493	1,933,228
July	457	1,818,838	547	2,130,581
June	521	2,177,995	507	2,103,914
May	435	1,820,644	538	2,216,561
April	434	1,796,849	528	2,093,444
March	472	1,899,036	517	2,032,263
February	398	1,680,392	449	1,867,624
January	387	1,556,853	457	1,869,323
December, 1924 ..	423	1,678,667	470	1,922,485

Philadelphia

(Including Chester, Wilmington and the whole Philadelphia port district)
(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	85	211,019	51	113,257
August	84	197,743	65	146,144
July	96	241,244	57	131,400
June	107	260,766	67	165,940
May	87	209,866	63	155,359
April	102	248,546	67	182,335
March	96	238,863	58	163,257
February	93	238,802	55	154,033
January	77	224,574	57	180,331
December, 1924 ..	71	179,994	61	188,667

Boston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	114	328,275	78	196,632
August	136	349,514	104	246,275
July	140	386,982	115	283,558
June	161	368,009	111	213,985
May	118	296,551	93	205,291
April	99	224,275	82	179,010
March	94	295,292	54	159,928
February	85	278,024	46	121,141
January	78	205,327	34	80,480
December, 1924 ..	100	278,347	52	125,332

Portland, Me.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	19	36,082	22	45,258
August	16	37,391	17	36,191
July	23	48,916	23	54,903
June	26	37,668	23	38,892
May	23	42,242	27	47,648
April	24	53,326	30	86,338
March	29	96,263	27	88,408
February	21	72,642	24	83,393
January	23	65,910	23	65,218
December, 1924 ..	30	86,088	29	78,076

Providence

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	7	21,260	7	22,410
August	3	14,019	5	17,041
July	12	34,835	9	27,767
June	8	34,034	7	28,575
May	15	40,589	9	27,016
April	8	26,506	9	34,277
March	11	43,757	7	28,136
February	12	37,995	13	41,669
January	12	38,395	11	39,717
December, 1924 ..	9	36,259	11	40,624

Portland, Oreg.

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1925	16	62,202	23	81,712
July	15	56,181	23	79,132
June	19	64,684	26	85,839
May	11	47,728	20	77,847
April	17	68,981	19	80,425
March	15	56,297	26	90,025
February	13	51,236	21	81,438
January	19	71,880	23	86,518
December, 1924 ..	17	64,756	29	115,186
November, 1924 ..	27	105,529	36	137,696

Baltimore

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	93	264,455	109	310,029
August	109	319,469	104	319,035
July	115	345,191	123	350,375
June	118	348,571	121	358,738
May	118	341,793	129	379,956
April	125	363,563	133	394,223
March	115	344,937	112	322,580
February	103	323,817	79	250,369
January	90	282,299	79	250,369
December, 1924 ..	105	326,907	99	291,048

Norfolk and Newport News

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	39	94,940	85	237,623
August	70	183,064	122	348,478
July	61	163,764	131	347,756
June	81	221,318	152	433,953
May	63	159,186	140	376,657
April	82	84,936	112	308,744
March	26	73,427	100	267,061
February	14	40,669	66	186,031
January	39	95,259	88	262,371
December, 1924 ..	41	108,930	93	274,576

Savannah

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1925	34	77,027	39	87,455
July	38	97,332	34	91,981
June	26	60,788	27	60,924
May	27	71,946	22	65,595
April	39	106,938	36	59,574
March .....	..	..	..	..
February	40	101,403	37	91,135
January	33	90,730	33	91,062
December, 1924 ..	40	109,496	40	113,538
November, 1924 ..	36	109,623	39	115,168

Key West

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	76	96,356	73	91,119
August	72	90,106	70	87,924
July	77	94,002	76	91,264
June	87	95,533	85	95,397
May	104	119,502	103	119,729
April	85	103,116	84	102,860
March	88	105,841	87	115,285
February	77	94,214	77	96,890
January	75	100,350	71	96,815
December, 1924 ..	77	90,316	72	83,706

Mobile

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	80	149,289	76	171,432
August	83	172,872	75	152,613
July	89	180,488	80	160,739
June	86	161,215	79	156,160
May	95	193,841	89	172,419
April	92	190,808	91	180,993
March	97	215,386	91	197,950
February	93	192,722	82	184,575
January, 1924	84	192,722	82	184,575

Seattle

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	42	173,157	43	183,917
August	31	135,105	35	144,874
July	32	137,319	28	130,875
June	34	143,655	41	174,668
May	28	132,043	39	138,570
April	41	156,761	42	173,116
March	39	168,567	39	157,419
February	31	124,870	30	129,648
January	39	169,458	36	145,663
December, 1924 ..	36	164,991	45	181,849

New Orleans

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	248	655,367	248	680,446
August	257	675,405	253	664,064
July	265	673,711	262	648,474
June	268	679,277	249	609,897
May	256	666,503	216	724,621
April	266	692,569	283	727,186
March	294	774,343	280	738,445
February	178	435,135	170	433,675
January	253	731,964	264	738,164
December, 1924 ..	277	776,064	257	735,100

Houston

(Cargo tonnage)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
December, 1924 ..	99	39,568	102	154,455
November	101	36,016	95	233,436
October .....	..	34,945	..	192,986
September	94	50,710	90	171,239
August	82	66,665	84	114,966
July	59	77,062	57	228,417
June	65	74,794	72	336,312
May	72	64,937	71	362,350
April	78	76,466	73	337,757
March, 1924	88	113,064	87	411,715

Galveston

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
August, 1925	28	80,524	41	133,058
July	36	100,359	52	141,316
June	47	120,423	57	177,647
May	46	114,702	53	161,098
April	47	107,223	60	171,864
March	55	147,303	75	228,187
February	56	140,065	90	277,751
January	67	188,781	110	337,832
December	63	190,311	107	341,705
November, 1924 ..	100	342,472	126	408,277

Los Angeles

(Exclusive of Domestic)

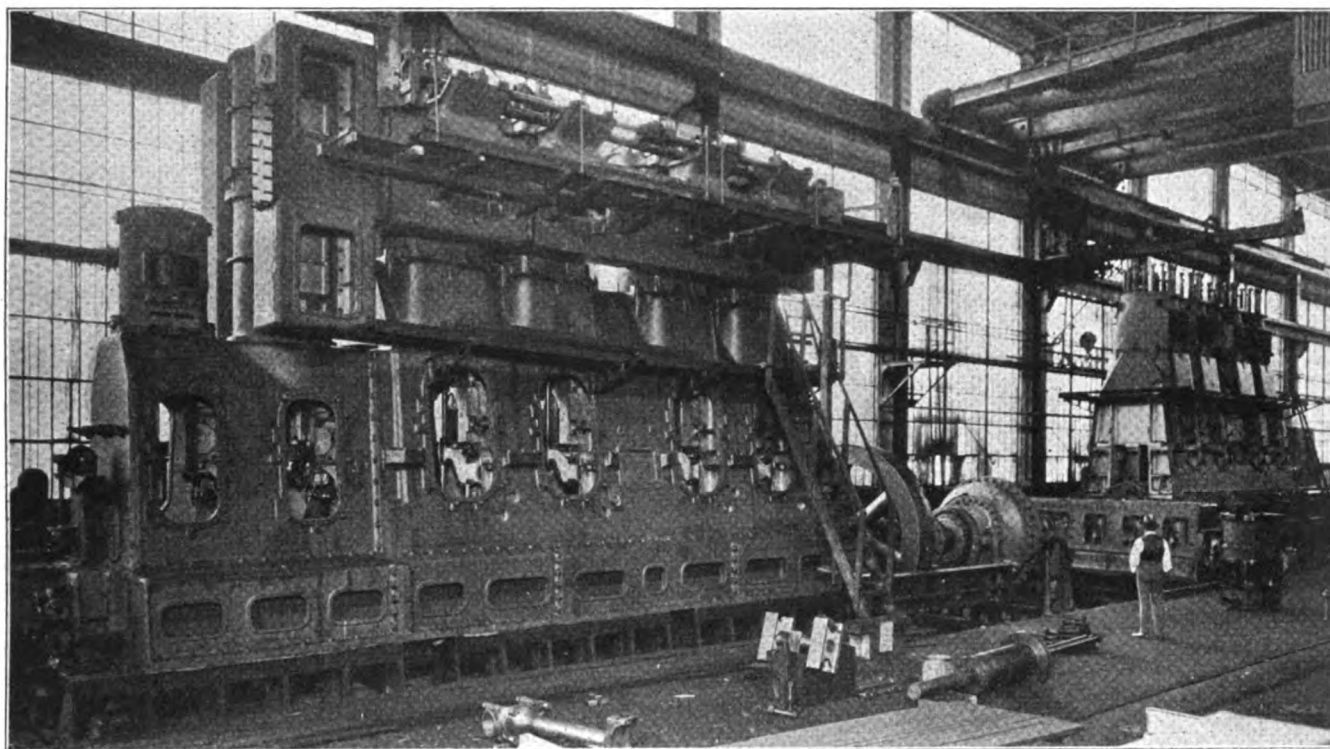
Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	115	284,493	205	259,437
August	161	344,646	160	295,220
July	133	326,692	119	285,844
June	162	382,186	102	278,294
May	168	363,843	138	298,066
April	153	316,134	137	262,631
March	131	359,572	113	281,149
February	162	284,988	127	237,474
January	127	312,248	115	259,345
December, 1924 ..	153	343,151	118	276,302

San Francisco

(Exclusive of Domestic)

Month	Entrances		Clearances	
	No. ships	Net tonnage	No. ships	Net tonnage
September, 1925 ..	135	487,872	144	535,301
August	154	579,197	154	549,844
July	138	517,798	136	511,844
June	135	514,900	96	464,024
May	163	567,001	145	554,483
April	134	472,879	157	517,654
March	129	542,912	139	669,367
February	117	443,749	124	454,699
January	119	446,477	126	454,360
December, 1924 ..	59	231,805	83	314,541

Port Arthur



Erecting shop of the Busch Sulzer Bros.-Diesel Engine Co., St. Louis, showing progress made (Oct. 8) in the building of two 1500 S. H. P. diesels for the twin screw conversion of the Standard Oil Co. (N. J.) tanker E. T. BEDFORD.—These engines are 4 cylinders, 30 x 42 inches and 90 r. p. m., two cycle scavenging with integrate scavenging pump and air compressor.—Extreme simplicity of design, the product of 27 years of designing and building over 600 Diesel engines

Bracketless System of Shipbuilding

AS IS well known, one of the chief features of an Isherwood ship is that for given dimensions a considerable saving in the weight of steel involved in the hull is effected. It was the claim that such an economy in the use of steel could be made that led a well-known shipbuilder to comment that he could not see how a ship was going to be successfully built and sent to sea whilst at the same time a goodly proportion of the steel was to be left in the yard. Nevertheless, it has been done, and is still being done; but Sir Joseph Isherwood seems to be of the opinion that it is not yet being as economically or efficiently done as it might be, at any rate in the case of oil tankers.

By a drastic alteration of the internal arrangements of the hull, Sir Joseph has successfully demonstrated in the construction of many hundreds of tankers how a considerable quantity of steel can be saved, as compared with the transverse method, and at the same time a great increase in the strength of the vessels be brought about. Pursuing his investigations a step further, he now proposes by another ingenious modifica-

tion to show how this can still be done and the construction simplified. Sir Joseph's present proposal, which at first blush seems audacious, is to eliminate the corner brackets in the tanks.

It is an accepted fact that the most fruitful source of trouble in the transversely framed oil tanker—and, incidentally, the chief item in the repairs and maintenance account—has been the utter impossibility of maintaining sound bracket connections to the bulkheads which would do what was intended of them and avoid leakage.

Eliminates Brackets at Bulkheads

Sir Joseph Isherwood, in the development of the tanker on his system, greatly minimized, if, indeed, he did not almost eliminate this difficulty, and practically suppressed the leakage; but it cannot be gainsaid that he only achieved this at the cost of great expense, which was, however, considerably more than counterbalanced by the other large economies effected. Sir Joseph's present proposal goes a step better by obviating any possibility of leakage at the bulkhead bracket connections by leaving out the brackets, and, as this can be

done without in any way disturbing the continuity of longitudinal strength in the structure, it certainly should be most efficacious.

Anyone familiar with the interior of the tanks, and looking at the number of brackets—which are so tedious and expensive to fit—connecting the longitudinal stiffeners at the sides of the ship to the horizontal stiffeners on the transverse bulkheads, and these transverse bulkhead stiffeners to those on the longitudinal bulkhead, will readily grasp the appreciable simplification in construction which is being effected, the resultant decrease in labour costs, and what it means to the ship in upkeep and maintenance.

The corner brackets are eliminated from each tank by stopping the longitudinals at the sides of the ship and at the middle line bulkhead short of the transverse bulkheads and supporting them by the transverses at the sides and the webs on the longitudinal bulkhead, dealing in the same way with the horizontal stiffeners on the transverse bulkheads. This is done by an ingenious disposition of materials and scantlings. The spacing of transverses and sizes of longitudinals are so arranged that the

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strength of the longitudinals projecting beyond the transverses, and which are not connected to the bulkheads, is the same as the strength of the longitudinals between the transverses.

The ends of the longitudinals and horizontals are treated as beams, the end portions of which, projecting beyond a transverse or web, are fixed at the transverses or webs, and are not fixed at the ends, i. e., not connected by brackets, which have been dispensed with, though the strength of the projecting portion will remain substantially the same as that portion between the points where it is supported or fixed by transverses or webs.

In the recent publication of their new rules for the construction of tankers, embodying and adapting as they do not only the Isherwood system, but the practice established by Sir Joseph Isherwood. Lloyd's register of shipping has paid the rarest possible kind of compliment to his faculty for invention and his merit as a naval architect, and when a naval architect of Sir Joseph's ability and standing brings forward this new invention, and supports it with all the weight of his professional reputation, it certainly behooves all concerned with the building and managing of oil tankers to consider carefully what he has to say.

WHAT is said to be the largest single plywood contract of the year was recently awarded to the Haskellite Mfg. Corp., for the three new Merchants and Miners Transportation Co. ships now under construction by the Newport News Shipbuilding & Dry Dock Co. A total of 60,000 square feet of $\frac{3}{4}$ inch "Haskellite" will be used for the bulkheads of these ships. In addition 15,000 square feet of "Plymetal" will be used for the partitions of all bath rooms and toilets.

The "Plymetal" installation it is understood will be the biggest of its kind ever made in a passenger ship.

Ocean Freight Rates

Per 100 Pounds Unless Otherwise Stated

Quotations Corrected to Oct. 17, 1925 on Future Loadings

NOTE: FREIGHT RATES IMPROVED WITH BUSINESS GOOD

to	Grain	Provisions	Cotton (H. D.)	Flour	General cargo	Finished steel	REMARKS	From North Pacific Ports to	Lumber Per m. t.
Liverpool	1s 9d	\$0.50	\$0.30 to 0.45	0 18	\$0.40	\$0.75	Improved	San Francisco	\$5.00
London	3s 0d	0.50	....	0 18	0.40	0.75	Improved	South California	5.00 to
Oso	\$0.20	0 45	0 50	0 27	0.42½	0.85	Very good	Hawaiian Islands	10.00 to 12.00
Copenhagen	0 20	0 45	0 50	0 26	0 42½	0.85	Very good	New Zealand	17.00 to 20.00
Hamburg	0 14	0 35	0 35	0 22	0 37½	0.75	Active	Sydney	11.50 to 12 50
Bremen	0.16 to 0.20	0 35	0 40	0 22	0 37½	0.75	Very good	Melbourne-Adelaide	12.00 to 13.00
Rotterdam and Amsterdam	0 15	0 32½	0 45	0 22	0 35	0.70	Very good	Oriental Ports	9.00 to 10.00
Antwerp	0 14	0 32½	0 35	0 20	0 35	0 70	Very good	Oriental Ports (logs)	11.50 to 13.00
Havre	0 16	0 50	0 35	0 27½	0 40	0 75	Slow	Peru-Chile	11.00 to 13.00
Bordeaux	0 16	0 50	0 35	0 27½	0 40	0 75	Slow	South Africa	17.00 to 18.00
Barcelona	0 20	12 00T	0 30	10 00	—12.00T—	10 00T	Good	Cuba	14.00 to 16.00
Lasbon	....	0 65	0 40	7 00T	—20 00T—	7 00T	Good	United Kingdom	75s to 90s
Marseilles	0 18	0 55	0 30	6 00	—20.00T—	5 00T	Fair	United Kingdom (ties)	70s to 80s
Genoa	0 19	12 50	0 40	7 00	—20 00T—	10 00T	Fair	Baltimore-Boston range	\$15.00 to 16.00
Naples	0 19	12 50	0 40	7 00	—20 00T—	10 00T	Fair	Baltimore-Boston range (ties)	Not quoted
Constantinople	0 27	17 00T	0 75	0 32½	—20 00T—	9 00T	Very good	Buenos Aires	14.00
Alexandria	....	17 00T	0 75	0 32½	—20 00T—	9 00T	Very good	Flour and Wheat	
Algiers	....	0 75	0 50	0 40	—20 00T—	7 00T	Very Slow	U. K. and Continent (gross ton)	32s 6d to 37s 6d
Dakar	....	15 00	....	14 00T	—21 00T—	10 50T	Good	Oriental Ports (net tons)	\$4.50 to 5.00
Capetown	10.00T	18 00	....	12 00T	—18.00T—	18 00T	Very good		
Buenos Aires	....	18.00 to 20.00T	....	....	18.00 to 20.00T†	8.00 to 8.80T	Good		
**Rio de Janeiro	....	21.50 to 23.50T	....	11.25 to 12.50T	19.00 to 21.00T†	7.00 to 7.70T†	Fair		
Pernambuco	....	22.00T	....	9.50T	—22.00T—†	9.70T†	Fair		
Havana	0.22½ to 0.27½*	0.42½*	....	0.22½*	0.54*	1.08*	10.20*	Very good	
Vera Cruz	0.25	0.40	0.45	0.25	0.52½	1.05	0.30 to 0.35	Very good	
Valparaiso	....	1.07	....	0.70	0.45	0.80	10.00T	Good	
San Francisco	....	0.40 to 0.70	....	0.50 to 1.10	....	2.50	0.55 to 1.00	Very good	
Sydney	....	18 00T	2.50	18 00T	18.00-24.00T	9.00-12.00T	Fair		
Calcutta	....	16.00T	0.60	12 00T	—16 00T—	10.00T	Fair		

T—Ton. †Per quarter of 480 lbs. ‡Landed. ††Heavy products limited in length. *Extra charge for wharfrage.

**Plus \$1.00 surcharge on all rates to Rio de Janeiro on account of congestion.

Principal Rates To and From United Kingdom

Grain, River Plate to United Kingdom	17 6	Pig iron, United Kingdom to New York or Philadelphia	12 6
Coal, South Wales to Near East	9 0	Iron ore, Bilbao to Cardiff	5 9
Coal, United Kingdom to Buenos Aires	17 3	Iron ore, Huelva to Phila. or Balto	10 0
Manganese Ore, Poti to Philadelphia	\$3.75		

NOTE: Lighterage rates on fuel in New York reduced from 6½ to 5½¢ per barrel.

Bunker Prices

At New York

	Coal alongside per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
Feb. 18, 1925	5.25@6.05	1.86½	5.50c
Mar. 17	5.00@6.25	1.86½	6.00@6.50c
April 20	5.00@6.00	1.86½	5.50
May 18	5.00@6.00	1.75	5.48
June 4	5.00@6.00	1.86½	5.50
July 20	4.00@6.00	1.75	5.50
Aug. 17	5.00@6.00	1.71½	5.50
Sept. 19	5.50@6.00	1.71½	5.00
Oct. 17, 1925	5.00@6.00	1.70½	5.00

At Philadelphia

	Coal trim. in bunk per ton	Fuel oil alongside per barrel	Diesel oil alongside per gallon
Feb. 18, 1925	5.25@5.80	2.10@2.25	5.9@6.9
Mar. 17	5.05@5.82	2.06½@2.31	6.10@6.15
April 20	5.00@6.00	1.95@2.06½	5.65½
May 18	5.00@5.80	1.85@1.91½	5.41@5.64
June 4	4.50@5.50	1.86½	5.50
July 20	4.00@5.50	1.69@1.81½	5.15@5.43
Aug. 17	5.00@5.80	1.56@1.71½	5.15@5.29
Sept. 19	5.25@5.50	1.55@1.61½	5.00
Oct. 17, 1925	5.25@5.50	1.71½@1.74½	5.15@5.65

Other Ports

Boston, coal, per ton	\$5.87
Boston, oil, f. a. s., per barrel	\$1.78
Hampton Roads, coal, per ton, f.o.b., piers	5.35 to 5.50 f.o.b.
Oct. 12 — Cardiff, coal, per ton	10s 6d
London, coal, per ton	25s 6d
Antwerp, coal, per ton	23s 6d
Antwerp, Fuel oil, per ton	77s 6d
Antwerp, Diesel oil, per ton	97s 6d
British ports, Fuel oil	72s 6d
British ports, Diesel oil	87s 6d